

The **Communicator**

May 2019



A Publication Of Surrey Amateur Radio Communications

May 2019



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The **Communicator** is a publication of Surrey Amateur Radio Communications. It appears monthly, except July and August, for area Amateur Radio operators and beyond, to enhance the exchange of information and to promote ham radio activity.

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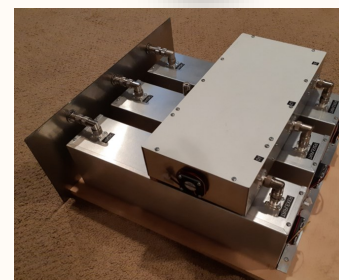
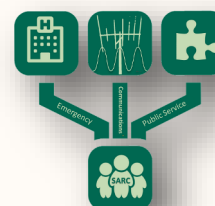
Regular readers who are not SARC members are invited to contribute a \$5 annual [donation](#) towards our Field Day fund via [PayPal](#).

SARC maintains a website at www.ve7sar.net and a Digital Communicator at ve7sar.blogspot.ca that includes recent news, past issues of The Communicator, our history, photos, videos and other information.

IN THIS ISSUE

click on the page number below

	QRM	3
	The Rest Of The Story—David Sarnoff	4
	Back To Basics	7
	What's Happening This Month In Ham?	12
	News You Can Lose—Ham Humour	13
	SARC News	14
	At The Last Meeting-The RF Seismograph	15
	Surrey Operations & Training Centre News	16
	OTC News	18
	Radio Ramblings	22
	Public Service/SEPAR Report	28
	KB6NU's Column	30
	CW Prosigns	32
	Surrey Doors Open	36
	Foundations of Amateur Radio	38
	Ham Recipes	41
	Tech Topics	42
	QRT	50



On The May Cover...

Perhaps 15% of our membership are CW licensed, but a smaller number are competent. In this issue we have a smattering of CW related articles and tidbits that may provide the impetus for a few more to improve their 'fist'.



QRM

---... ---

...from the Editor's Shack

*Do you have a photo or bit of SARC news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [communicator @ ve7sar.net](mailto:communicator@ve7sar.net) for inclusion in this publication.*

The April General Meeting was a treat again. As a matter of fact, I have had several comments about the quality of the presenters at our last two meetings.

Alex Schwartz VE7DXW gave an excellent overview of the RF Seismograph project. While it was originally intended to monitor propagation conditions, there proved to be a relationship between fluctuations in the background HF noise level and the occurrence of an earthquake within hours of a fluctuation.

Exciting stuff because even an hour's warning before an earthquake could save countless lives. The research was backed by an article in the prestigious 'Scientific American' magazine. Our article starts on page 15 and a video of the presentation is available.

We are gearing up for several major events locally, including our Fox Hunt on May 11, Surrey Doors Open on June 8 and of course Field Day on June 22-23. You can find the details here in this month's issue. For these events we not only need your support but also your assistance to make these a success.

Kevin McQuiggin has received quite a bit of favourable feedback on his 'Radio Ramblings' columns. He recently wrote about his return to the hobby after 25 years. This month another look back, this time at the history of his long-time residence. After some great detective work, it turns out he is not the only Ham to have lived there.

With just one more issue to go until our summer break, this month has our Annual General Meeting notice. Please consider tossing your hat in the ring to take up a Director's post—we need some fresh blood.

The May meeting topic is generally Field Day, so Jason will be providing an overview of plans and expectations for this annual June event.

Congratulations to our Secretary Scott Hawrelak VE7HA. He has just successfully achieved his Advanced license and describes his experiences in this month's QRT article.

~ John VE7TI
Communicator Editor

On the Web

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Between newsletters, watch your e-mail for news, announcements of Amateur Radio events, monthly meetings and training opportunities.

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*"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."
— Isaac Asimov*

May 2019



The Rest Of The Story...

David Sarnoff

TV, RCA, RKO, NBC And More!



David Sarnoff

David Sarnoff (February 27, 1891 - December 12, 1971) was a Russian emigrant, an American businessman and pioneer of American radio and television. Throughout most of his career he led the Radio Corporation of America (RCA) in various capacities from shortly after its founding in 1919 until his retirement in 1970.

He ruled over an ever-growing telecommunications and media empire that included both RCA and NBC, and became one of the largest companies in the world. Named a Reserve Brigadier General of the Signal Corps in 1945, Sarnoff thereafter was widely known as "The General."

Sarnoff is credited with Sarnoff's law, which states that the value of a broadcast network is proportional to the number of viewers

Early life and career

David Sarnoff was born to a Jewish family in Uzlyany, a small town in Russian Empire, the son of Abraham and Leah Sarnoff. Abraham emigrated to the United States and raised funds to bring the family. Sarnoff spent much of his early childhood in a cheder (or yeshiva) studying and memorizing the Torah. He emigrated with his mother and three brothers and one sister to New York City in 1900, where he helped support his family by selling newspapers before and after his classes at the Educational Alliance. In 1906 his father became incapacitated by tuberculosis, and at age 15 Sarnoff went to work to support

the family. He had planned to pursue a full-time career in the newspaper business, but a chance encounter led to a position as an office boy at the Commercial Cable Company. When his superior refused him paid leave for Rosh Hashanah, he joined the Marconi Wireless Telegraph Company of America on September 30, 1906, and started a career of over 60 years in electronic communications.

Over the next 13 years, Sarnoff rose from office boy to commercial manager of the company, learning about the technology and the business of electronic communications on the job and in libraries. He also served at Marconi stations on ships and posts on Siasconset, Nantucket and the New York Wanamaker Department Store. In 1911, he installed and operated the wireless equipment on a ship hunting seals off Newfoundland and Labrador, and used the technology to relay the first remote medical diagnosis from the ship's doctor to a radio operator at Belle Isle with an infected tooth.

The following year, he led two other operators at the Wanamaker station in an effort to confirm the fate of the Titanic. Sarnoff later exaggerated his role as the sole hero who stayed by his telegraph key for three days to receive information on the Titanic's survivors. The event began on a Sunday, when the store would have been closed. Some researchers question whether Sarnoff was at the telegraph key at all. By the time of the Titanic disaster in 1912, Sarnoff was a manager of the telegraphers.

Over the next two years Sarnoff earned promotions to chief inspector and contracts

manager for a company whose revenues swelled after Congress passed legislation mandating continuous staffing of commercial shipboard radio stations. That same year Marconi won a patent suit that gave it the coastal stations of the United Wireless Telegraph Company. Sarnoff also demonstrated the first use of radio on a railroad line, the Lackawanna Railroad Company's link between Binghamton, New York, and Scranton, Pennsylvania; and permitted and observed Edwin Armstrong's demonstration of his regenerative receiver at the Marconi station at Belmar, New Jersey. Sarnoff used H. J. Round's hydrogen arc transmitter to demonstrate the broadcast of music from the New York Wanamaker station.

This demonstration and the AT&T demonstrations in 1915 of long-distance wireless telephony inspired the first of many memos to his superiors on applications of current and future radio technologies. Sometime late in 1915 or in 1916 he proposed to the company's president, Edward J. Nally, that the company develop a "radio music box" for the "amateur" market of radio enthusiasts. Nally deferred on the proposal because of the expanded volume of business during World War I. Throughout the war years, Sarnoff remained Marconi's Commercial Manager, including oversight of the company's factory in Roselle Park, New Jersey.

RCA

Unlike many who were involved with early radio communications, who often viewed radio as point-to-point, Sarnoff saw the potential of radio as point-to-mass. One person (the broadcaster) could speak to many (the listeners).

When Owen D. Young of General Electric arranged the purchase of American Marconi and turned it into the Radio Corporation of America, a radio patent monopoly, Sarnoff realized his dream and revived his proposal in a lengthy memo on the company's business and prospects. His superiors again ignored him but he contributed to the rising postwar radio boom by helping arrange for the broadcast of a heavyweight boxing match between Jack Dempsey and Georges Carpentier in July 1921. Up to 300,000 people heard the fight, and demand for home radio equipment bloomed that winter. By the spring of 1922 Sarnoff's prediction of popular demand for broadcasting had come

true, and over the next eighteen months, he gained in stature and influence.

In 1925, RCA purchased its first radio station (WEAF, New York) and launched the National Broadcasting Company (NBC), the first radio network in America. Four years later, Sarnoff became president of RCA. NBC had by that time split into two networks, the Red and the Blue. The Blue Network later became ABC Radio. Sarnoff was often inaccurately referred to later in his career as the founder of both RCA and NBC, but he was in fact founder of only NBC.

Sarnoff was instrumental in building and establishing the AM broadcasting radio business that became the preeminent public radio standard for the majority of the 20th century. This technology dominance continued until FM broadcasting radio re-emerged in the 1960s despite Sarnoff's efforts to suppress it.

RKO

Sarnoff negotiated successful contracts to form Radio-Keith-Orpheum (RKO), a film production and distribution company. Essential elements in that new company were RCA, the Film Booking Offices of America (FBO), and the Keith-Albee-Orpheum (KAO) theater chain.

Early history of television

When Sarnoff was put in charge of radio broadcasting at RCA, he soon recognized the potential for television, i.e., the combination of motion pictures with electronic transmission. Schemes for television had long been proposed (well before World War I) but with no practical outcome. Sarnoff was determined to lead his company in pioneering the medium and met with Westinghouse engineer Vladimir Zworykin in 1928. At the time Zworykin was attempting to develop an all-electronic television system at Westinghouse, but with little success. Zworykin had visited the laboratory of the inventor Philo T. Farnsworth, who had developed an Image Dissector, part of a system that could enable a working television. Zworykin was sufficiently impressed with Farnsworth's invention that he had his team at Westinghouse make several copies of the device for experimentation.

Zworykin pitched the concept to Sarnoff, claiming a viable television system could be realized in two years with a mere \$100,000

May 2019

investment. Sarnoff opted to fund Zworykin's research, most likely well-aware that Zworykin was underestimating the scope of his television effort. Seven years later, in late 1935, Zworykin's photograph appeared on the cover of the trade journal *Electronics*, holding an early RCA photomultiplier prototype. The photomultiplier, subject of intensive research at RCA and in Leningrad, Russia, would become an essential component within sensitive television cameras. On April 24, 1936, RCA demonstrated to the press a working iconoscope camera tube and kinescope receiver display tube (an early cathode ray tube), two key components of all-electronic television.

The final cost of the enterprise was closer to \$50 million. On the road to success they encountered a legal battle with Farnsworth, who had been granted patents in 1930 for his solution to broadcasting moving pictures. Despite Sarnoff's efforts to prove that he was the inventor of the television, he was ordered to pay Farnsworth \$1,000,000 in royalties, a small price to settle the dispute for an invention that would profoundly revolutionize the world.

In 1929, Sarnoff engineered the purchase of the Victor Talking Machine Company, the nation's largest manufacturer of records and phonographs, merging radio-phonograph production at Victor's large manufacturing facility in Camden, New Jersey.

Sarnoff became president of RCA on January 3, 1930, succeeding General James Harbord. On May 30 the company was involved in an antitrust case concerning the original radio patent pool. Sarnoff negotiated an outcome where RCA was no longer partly owned by Westinghouse and General Electric, giving him final say in the company's affairs.

Initially, the Great Depression caused RCA to cut costs, but Zworykin's project was protected. After nine years of Zworykin's hard work, Sarnoff's determination, and legal battles with Farnsworth (in which Farnsworth was proved in the right), they had a commercial system ready to launch. Finally, in April 1939, regularly scheduled, electronic television in America was initiated by RCA under the name of their broadcasting division at the time, The National Broadcasting Company (NBC). The first television broadcast aired was the dedication of the RCA pavilion at the 1939 New York World's Fairgrounds and was introduced by Sarnoff himself. Later that month on April 30,

opening day ceremonies at The World's Fair were telecast in the medium's first major production, featuring a speech by President Franklin D. Roosevelt, the first US President to appear on television. These telecasts were seen only in New York City and the immediate vicinity, since NBC television had only one station at the time, W2XBS Channel 1, now WNBC Channel 4. The broadcast was seen by an estimated 1,000 viewers from the roughly 200 televisions sets which existed in the New York City area at the time.

The standard approved by the National Television System Committee (the NTSC) in 1941 differed from RCA's standard, but RCA quickly became the market leader of manufactured sets and NBC became the first television network in the United States, connecting their New York City station to stations in Philadelphia and Schenectady for occasional programs in the early 1940s.

Meanwhile, a system developed by EMI based on Russian research and Zworykin's work was adopted in Britain and the BBC had a regular television service from 1936 onwards. However, World War II put a halt to a dynamic growth of the early television development stages.

World War II

At the onset of World War II, Sarnoff served on Eisenhower's communications staff, arranging expanded radio circuits for NBC to transmit news from the invasion of France in June 1944. In France, Sarnoff arranged for the restoration of the Radio France station in Paris that the Germans destroyed and oversaw the construction of a radio transmitter powerful enough to reach all of the allied forces in Europe, called Radio Free Europe. In recognition of his achievements, Sarnoff was decorated with the Legion of Merit on October 11, 1944.

Thanks to his communications skills and support he received the Brigadier General's star in December 1945, and thereafter was known as "General Sarnoff." The star, which he proudly and frequently wore, was buried with him.

Sarnoff anticipated that post-war America would need an international radio voice explaining its policies and positions. In 1943, he tried to influence Secretary of State Cordell Hull to include radio broadcasting in post-war planning. In 1947, he lobbied Secretary of State George Marshall to expand the roles of Radio Free Europe

and Voice of America. His concerns and proposed solutions were eventually seen as prescient.

Post-war expansion

After the war, monochrome TV production began in earnest. Color TV was the next major development, and NBC once again won the battle. CBS had their electro-mechanical color television system approved by the FCC on October 10, 1950, but Sarnoff filed an unsuccessful suit in the United States district court to suspend that ruling. Subsequently, he made an appeal to the Supreme Court which eventually upheld the FCC decision. Sarnoff's tenacity and determination to win the "Color War" pushed his engineers to perfect an all-electronic color television system that used a signal that could be received on existing monochrome sets that prevailed. CBS was now unable to take advantage of the color market, due to lack of manufacturing capability and color programming, a system that could not be seen on the millions of black and white receivers and sets that were triple the cost of monochrome sets. A few days after CBS had its color premiere on June 14, 1951, RCA demonstrated a fully functional all-electronic color TV system and became the leading manufacturer of color TV sets in the US.

CBS system color TV production was suspended in October 1951 for the duration of the Korean War. As more people bought monochrome sets, it was increasingly unlikely that CBS could achieve any success with its incompatible system. Few receivers were sold, and there were almost no color broadcasts, especially in prime time, when CBS could not run the risk of broadcasting a program which few could see. The NTSC was reformed and recommended a system virtually identical to RCA's in August 1952. On December 17, 1953 the FCC approved RCA's system as the new standard.

Family life

On July 4, 1917, Sarnoff married Lizette Hermant, the daughter of a French-Jewish immigrant family who settled in the Bronx as one of his family's neighbors. The Museum of Broadcast Communications describes their 54-year marriage as the bedrock of his life. Lizette was often the first person to hear her husband's new ideas as radio and television became integral to American home life.

The couple had three sons. Eldest son Robert W. Sarnoff (1918-1997) succeeded his father at the helm of RCA in 1970. Robert's second wife was operatic soprano Anna Moffo. Edward Sarnoff, the middle child, headed Fleet Services of New

York. Thomas W. Sarnoff, the youngest, was NBC's West Coast President.

Sarnoff was the maternal uncle of screenwriter Richard Baer. Sarnoff was credited with sparking Baer's interest in television. According to Baer's 2005 autobiography, Sarnoff called a vice president at NBC at 6 A.M. and ordered him to find Baer "a job by 9 o'clock" that same morning. The NBC vice president complied with Sarnoff's request.

David Sarnoff was initiated to the Scottish Rite Freemasonry in the Renovation Lodge No. 97, Albion, NY

Later years

In 1955, Sarnoff received The Hundred Year Association of New York's Gold Medal Award "in recognition of outstanding contributions to the City of New York."

In 1959 Sarnoff was a member of the Rockefeller Brothers Fund panel to report on U.S. foreign policy. As a member of that panel and in a subsequent essay published in *Life* as part of its "The National Purpose" series, he was critical of the tentative stand being taken by the United States in fighting the political and psychological warfare being waged by Soviet-led international Communism against the West. He strongly advocated an aggressive, multi-faceted fight in the ideological and political realms with a determination to decisively win the Cold War.

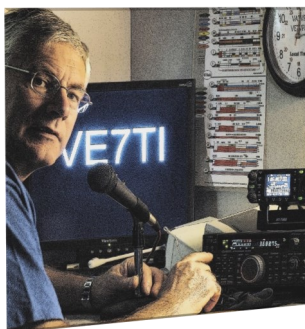
Sarnoff retired in 1970, at the age of 79, and died the following year, aged 80. He is interred in a mausoleum featuring a stained-glass vacuum tube in Kensico Cemetery in Valhalla, New York.

And that... is the rest of his story.

~

Sarnoff with Albert Einstein and other noted scientists and engineers on a tour of the RCA wireless station in New Brunswick, New Jersey in 1921





Back to Basics

John Schouten VE7TI

From The Canadian Basic Question Bank

This month a closer look at 'Q' Codes...

B-002-007-007 The signal "QRM" signifies:

- A. Your signals are fading
- B. Is my transmission being interfered with?
- C. I am being interfered with
- D. I am troubled by static

The original Q codes were created, circa 1909, by the British government as a "list of abbreviations prepared for the use of British ships and coast stations licensed by the Postmaster General". The Q codes facilitated communication between maritime radio operators speaking different languages, so they were soon adopted internationally. A total of forty-five Q codes appeared in the "List of Abbreviations to be used in Radio Communications", which was included in the Service Regulations affixed to the Third International Radiotelegraph Convention in London.

The Q code is widely used in radio communications applications, especially in CW. On the Canadian Basic Exam you can expect 2 or 3 questions on the meaning of codes, either by being given the code and asked for the meaning, as above, or given the meaning and a selection of four 3-letter codes.

While the Q code arose out of the need to communicate quickly and concisely when using Morse code, but its use has spread more widely than that, especially within amateur radio. As the terms have been used widely in Morse operation, their use also spread into voice communications as well, although this is discouraged. As a matter of fact, while not forbidden, the Canadian regulations recommend 'plain language' when using voice.

The Q code is an extensive set of codes covering an extremely wide variety of phases. These were used by marine, airborne and even land-based communications. The code meanings are defined in ITU (International Telecommunications Union)

documentation and they were introduced primarily for professional communications. However they are very convenient and easy to use and as a result their use has been widely adopted by radio hams as well.

Q code use

The Q codes have two forms. They can be used to pose a question, or provide an answer. Taking the example of QSL. This can be used in its question form where "QSL?" would be sent. This would request the receiving station to confirm or acknowledge receipt of a message, i.e. asking can you acknowledge receipt. The receiving station, assuming he can confirm that the message has been received, would send "QSL".

In this way the use of the Q code provides a very fast and effective way of communicating very concisely. With the meanings defined by the ITU, there should be little room for misunderstanding.

Q-code use in ham radio

Within amateur radio, the Q codes have started to appear in voice communications, and their use is somewhat less formal than when it is used for Morse communications. Additionally some of the Q codes have taken on special significance.

Often Q codes will be heard used in normal speech by radio amateurs. For example, one ham may be heard talking about a high level of QRM. When using the Q code in this manner, the basic meaning of the code is taken, such that the example given means that there is a high level of man made interference. Similarly a QRP station is one that is only using low power.

Another Q code that has taken on additional significance is QSL. In the early days of ham radio when the first transatlantic contacts were being made and other distance records were being broken, many radio hams wrote to each other confirming the contact. Someone then sent a special card to confirm a contact, and with this the idea of QSL cards was

born. Today, many millions of QSL cards are exchanged each year, and now even e-QSL cards are sent.

Q-code use today

Despite the fact that the Morse code is no longer mandatory and its use is in decline, the Q codes are still in widespread use, especially within ham radio. Accordingly it is anticipated that the Q codes will be heard for many years to come.

So, the answer to the question at the start of this column, **B-002-007-007** The signal "QRM" signifies:

C. I am being interfered with

So for now... I'm QRT and QTX.

~ 73 de VE7TI

Signal	Question ?	Answer, Advise, or Order
QBM	Has ... sent a message for me?	Here is the message sent by ... at ... hours.
QRB	How far are you from my station?	I am ____ km from you station
QCB	Delay	Delay is being caused by ... 1) your transmitting out of turn 2) Your slowness in answering 3) lack of your reply to my ...
QCS	Frequency Breakdown	My reception on ... frequency has broken down.
QCX	What is your full call sign?	My full call sign is ... OR Use your full call sign until further notice
QDB	Have you sent message... to ...?	I have sent message ... to ...
QIF	What frequency is ... using?	... is using ... khz (or ... mhz.).
QMH	Shift Frequency	Shift to transmit and receive on ... khz. (or ... mhz.); if communication is not established within 5 minutes, revert to present frequency.
QRA	What is the name of your station?	The name of my station is ...
QRB	How far are you from my station?	I am ____ km from you station
QRG	Will you tell me my exact frequency (or that of ...)?	Your exact frequency (or that of ...) is ... khz (or Mhz).
QRH	Does my frequency vary?	Your frequency varies.
QRI	How is the tone of my transmission?	The tone of your transmission is (1. Good; 2. Variable; 3. Bad).
QRJ	Are you receiving me badly?	I cannot receive you, your signal is too weak.
QRK	What is the readability of my signals (or those of ...)?	The readability of your signals (or those of ...) is ... (1 to 5).
QRL	Are you busy?	I am busy. (or I am busy with ...) Please do not interfere.
QRM	Are you being interfered with?	I am being interfered with. (M=man-made interference)

May 2019

QRN	Are you troubled by static?	I am troubled by static. (N=natural interference)
QRO	Shall I increase power?	Increase power
QRP	Shall I decrease power?	Decrease power
QRQ	Shall I send faster?	Send faster (... wpm)
QRS	Shall I send more slowly?	Send more slowly (... wpm)
QRT	Shall I stop sending?	Stop sending
QRU	Have you anything for me?	I have nothing for you
QRV	Are you ready?	I am ready.
QRW	Shall I inform ... that you are calling him on ... khz (or Mhz)?	Please inform ... that I am calling him on ... khz (or Mhz)
QRX	When will you call me again? Common Usage WAIT	I will call you again at ... (hours) on ... khz (or Mhz) Common Usage WAIT
QRZ	Who is calling me?	You are being called by ... on ... khz (or Mhz)
QSA	What is the strength of my signals (or those of...)?	The strength of your signals (or those of ...) is ... (1 to 5).
QSB	Are my signals fading?	Your signals are fading.
QSD	Is my keying defective?	Your keying is defective.
QSI	Unable To Break in	I have been unable to break in on your transmission. Or .. Will you inform ... (callsign) that I have been unable to break in on his transmission on ... khz (or Mhz.)
QSK	Can you hear me between your signals?	I can hear you between my signals.
QSL	Can you acknowledge receipt?	I am acknowledging receipt.
QSM	Shall I repeat the last telegram (message) which I sent you, or some previous telegram (message)?	Repeat the last telegram (message) which you sent me (or telegram(s) (message(s)) numbers(s) ...).
QSN	Did you hear me (or ... (call sign)) on .. khz (or Mhz)?	I did hear you (or ... (call sign)) on ... khz (or Mhz).
QSO	Can you communicate with ... direct or by relay? Common Usage -- A 2-Way Contact	I can communicate with ... direct (or by relay through ...).
QST	Can you call all Radio Amateurs?	Calling All Radio Amateurs
QSU	Shall I send or reply on this frequency (or on ... khz (Mhz)) (with emissions of class ...)?	Send or reply on this frequency or on ... khz (Mhz)) (with emissions of class ...)
QSV	Shall I send a series of V's on this frequency (or ... khz (or Mhz))?	Send a series of V's on this frequency (or ... khz (or Mhz))

QSW	Will you send on this frequency (or on ... khz (or Mhz)) (with emissions of class ...)?	I am going to send on this frequency (or on ... khz (or Mhz)) (with emissions of class ...)
QSX	Will you listen to ... (call sign(s) on ... khz (or Mhz))?	I am listening to ... (call sign(s) on ... khz (or Mhz)) Commonly used on the DX Packet Clusters to indicate where the DX station was listening or contacted during a split operation
QSY	Shall I change to transmission on another frequency?	Change to transmission on another frequency (or on ... khz (or Mhz)).
QSZ	Shall I send each word or group more than once?	Send each word or group twice (or ... times).
QTA	Shall I cancel telegram (message) No. ... as if it had not been sent?	Cancel telegram (message) No. ... as if it had not been sent.
QTG	Will you send two dashes of ten seconds each followed by your call sign (repeated ... times) (on ... khz (or Mhz))? Or Will you request ... to send two dashes of ten seconds followed by his call sign (repeated ... times) (on ... khz (or Mhz))?	I am going to (or I have requested ... to) send two dashes of ten seconds followed by call sign (repeated ... times) (on ... khz (or Mhz))
QTH	What is your position in latitude and longitude (or according to any other indication)?	My position is ... latitude...longitude
QTQ	Can you communicate with my station by means of the International Codes of Signals?	I am going to communicate with your station by means of the International Codes of Signals
QTR	What is the correct time?	The correct time is ... hours
QTS	Will you send your call sign for ... minutes(s) now (or at ... hours) (on ... khz (or Mhz)) so that your frequency may be measured?	I will send my call sign for ... minutes(s) now (or at ... hours) (on ... khz (or Mhz)) so that my frequency may be measured.
QTU	What are the hours during which your station is open?	My station is open from ... to ... hours.
QTV	Shall I stand guard for you on the frequency of ...khz (or Mhz) (from ... to ... hours)?	Stand guard for me on the frequency of ...khz (or Mhz) (from ... to ... hours)
QTX	Will you keep your station open for further communication with me until further notice (or until ... hours)?	I will keep my station open for further communication with you until further notice (or until ...hours)
QUA	Have you news of ... (call sign)?	Here is news of ...(call sign).
QUC	What is the number (or other indication) of the last message you received from me (or from .. (call sign))?	The number (or other indication) of the last message I received from you (or from ... (call sign) is ...

May 2019

May 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separ.shutterfly.com/calendar			1	2	3	4 08-1000 SARC Social: Kalmar Family Restaurant King George Blvd & 81st Avenue CONTEST: Delaware, New England, Indiana QSO Party (all modes)
5 Maple Ridge Swap Meet 09-Noon CONTEST: Delaware, New England, Indiana QSO Party (all modes)	6	7 1930 SEPAR Net 2000 SARC Net	8 1900 SARC General Meeting	9	10	11 08-1000 SARC Social: Kalmar Family Restaurant SARC FoxHunt CONTEST: CQ-M DX Contest (CW, SSB)
12 Mother's Day CONTEST: CQ-M DX Contest (CW, SSB)	13	14 1930 SEPAR Net 2000 SARC Net	15	16	17	18 08-1000 SARC Social: Kalmar Family Restaurant
19	20 Victoria Day	21 1930 SEPAR Net 2000 SARC Net	22 1900 SARC Exec Meeting	23	24	25 08-1000 SARC Social: Kalmar Family Restaurant Hyack Parade CONTEST: CQ WW WPX (CW)
26 CONTEST: CQ WW WPX (CW)	27	28 1930 SEPAR Net 2000 SARC Net	29	30	31	

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



Page 13—News You Can Lose

The Lighter Side of Amateur Radio

Help Coming For Poorly Translated Manuals

By K5KVN, on the scene

SAN FRANCISCO, Calif. — Ham radio manufactures have inked a deal with the popular language learning software Rosetta Stone, in an effort to ease frustrations with poorly translated programming manuals.

Baowood marketing officer Lin Rosen admitted that a problem exists but they can't change the manuals. "Our hands are tied! We have a long-term contract with the translators of our manuals. We can't change them."

A Yaecom official who wished to remain anonymous agreed. "We have a manual that reads 'celebrate the aerial about the transmission.' I have NO IDEA know what that means."

The solution, according to radio manufactures, is not to change the manual but teach customers the

additional languages. Beginning in 2014, most major radio manufacturers will ship the software for free with new radio purchases.

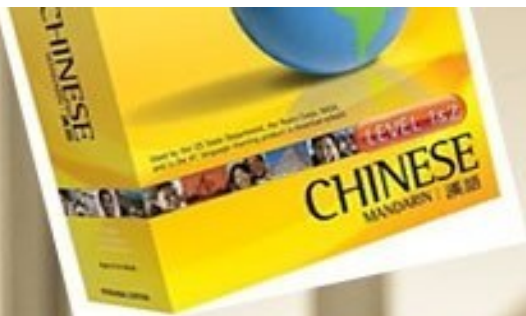
In addition to handling all "traditional" languages such as Chinese, Spanish and French, the software package will also help with the troublesome "broken English."

Only one radio manufacturer did not take part in the agreement. Peanut Whistle Transmitters, whose popular QRM modules and radios with celebrity catchphrases are gaining popularity, said they will continue to offer their manuals in three variations, unique to their brand: Cajun, Southern Slang and Pig Latin.

~ Ham Hijinks



Why women live longer than men



??



May 2019



At The Last SARC Meeting...

April General Meeting

Wednesday, April 10, 2019

Attendees: 28

Location: Emergency Management BC

Announcements

President Stan Williams VA7NF called the meeting to order and asked for any health and welfare reports. None heard.

Committee Reports

Financial Report

Treasurer Scott Hawrelak VE7HA gave the financial report and stated that over the next month he will be getting the books in order for fiscal year end. A change to the fiscal year-end from May 31st to April 30th had been discussed previously but not included with other bylaw revisions. The proposed change was deferred to a future AGM.

Fox Hunt

Anton James VE7SSD reminded everyone that our annual fox hunt is on Saturday May 11th from 9 am in Crescent Park in South Surrey, followed by a barbeque. A signup sheet was passed around. Spare equipment is available for those that don't have 80m receivers.

Les Tocko VA7OM demonstrated how to use the 80m receiver and has 3 of them available for sale at \$120 each. Details about the Fox Hunt are posted on the Surrey website <http://ve7sar.net> and blog site.

OTC

John Brodie VA7XB stated that the triplexer/diplexer/bandpass project is complete. The units have been installed at the OTC and appear to be operating well. A

big thanks to Les for all his hard work in assembling and tuning up the units. There will be a presentation/talk in the Fall on how they went together along with the problems that were solved along the way.

Public Service Group

Don Hamilton VA7GL reported that one meeting has been held to date with recommendations to purchase a 2m packet-capable transceiver and other equipment necessary to establish a connection to BC-WARN.

Don noted that the Seattle Communications Academy 2019 will be held next weekend (April 13/14). A few locals plan to attend. In reply to a question, it was noted that the PS Group would like to make use of SARC's handout brochure.

Membership

John VA7XB introduced Tom Ball VA7TQB who recently wrote the basic and advanced exams and achieved a score of 98% on both.

Bruce Prior N7RR/VA7TO reported that he is going to SEPAC end of May 2019 and has reserved a Motel 6 in the area with 2 beds but the second occupant is unable to attend. He is looking for another guest to share the costs on the room. Contact Bruce at n7rr@mail.com

Communicator

John Schouten VE7TI requested members send articles to communicator@ve7sar.net

Field Day

Jason Biggin VA7ITJ reported that SARC has committed to the Grandview Heights location

for this year's Field Day. The planning process for the use of the site has started. Jason will be bringing a map of the site to the McDonald's social meeting after for discussion.

—— Coffee Break ——

Presentation

After coffee break, Alex Schwarz VE7DXW made a presentation on detecting earthquakes and other ground based events that affect the ionosphere using an HF Radio.

Can Shortwave Radios Detect Earthquakes?

A New Tool To Assist Earthquake Prediction?

The RF Seismograph: Another Exciting Amateur Radio First.

Alex presented his findings at the SARC April 2019 monthly general meeting. Alex is exploring the possibility that "RF signatures" detected by the RF Seismograph propagation tool could also be indicating earthquakes, and may even be able to predict them shortly before they occur; one or two hours appear likely. A real-time HF propagation-monitoring tool developed by Schwarz and the MDSR team, the RF Seismograph shows both band noise and activity or band activity alone on six HF bands. It's a project of the North Shore Amateur Radio Club (NSARC).

It has been documented for some time that major geological movements create magnetic waves. These magnetic waves interact with RF and manifest themselves as disturbances that are received on HF. Alex had been monitoring propagation intending to study the effects of the last solar eclipse. His finding showed a correlation with earthquake activity and the RF Seismograph was born. Basically, this is a broadband HF receiver monitoring a large range of frequencies.

The RF-Seismograph's recent discovery that Earthquakes can be detected using a RF-receiver are intriguing and it validates a lot of new research that claims that earthquakes also create a magnetic field that extends into the ionosphere and causes changes that can be measured with a cluster of GPS receivers.

The RF-Seismograph team has been collaborating with Earthquakes Canada to find a correlation between HF propagation and earthquakes. There was a distinct event that occurred on Nov 1st

(M5.0 off the coast of Vancouver Island) which was detected by the RF-Seismograph an hour before. Of course an hour warning before a major earthquake is significant.

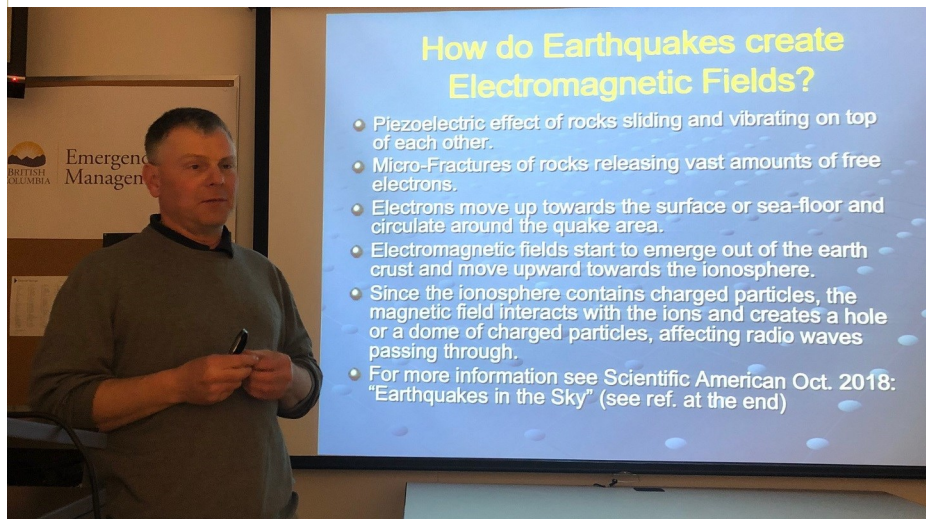
There is process underway to correlate earthquakes that are bigger than M6.0 with the 4 years of data accumulated so far.

"We had been doing the solar eclipse experiment, and we developed the RF Seismograph software to look for changes in propagation during the eclipse," Schwarz explained. "After the eclipse, we decided to leave the RF Seismograph running, and we have now collected 4 years of data."

The system uses an omnidirectional multiband antenna to monitor JT-65 frequencies (± 10 kHz) on 80, 40, 30, 20, 15, and 10 meters. Recorders monitor the background noise and display the result in six color-coded, long-duration graphs displaying 6 hours of scans. When signals are present on a band, its graph trace starts to resemble a series of vertical bars.

Most recently, the RF Seismograph recorded the magnitude 7.5 earthquake in Ecuador on February 22. Schwarz recounted that noise on 15 meters began to be visible about 1 hour before the quake; then, 2 hours after the quake released, 15 meters started to recover. The US Geological Survey said the quake was about 82 miles below ground. It did not affect 80 meters. Schwarz speculated that the quake was easy to see on the RF Seismograph because 15 meters typically is not open during hours of darkness — especially when the solar flux is only 70

Following a magnitude 5.0 earthquake off the coast of Vancouver Island, his RF Seismograph picked up changes. Canada's government-run Earthquakes Canada was able to provide Schwarz with a list of magnitude 6.0 or greater events since the RF Seismograph went into operation, and the two teams have been collaborating to



May 2019



The full video presentation is available from our blog at:

<https://ve7sar.blogspot.com/2019/04/can-shortwave-radios-detect-earthquakes.html>

find a correlation between HF propagation anomalies and earthquakes. With the measurements, Schwarz has been attempting find a correlation between the list of past geological events and what his RF Seismograph may have sensed on those occasions.

“The earthquakes show up as RF noise because of the electric field lines, now scientifically confirmed to change the way the ionosphere reflects RF,” Schwarz said. He cited an article in the October 2018 edition of Scientific American, which, he says, “explains it really well.” (See below)

The Scientific American article explores measurements in Japan looking into how earthquakes can create electric field lines that extend into the atmosphere. “Could they be used to detect earthquakes before they cause damage on the planet?” Schwarz asks.

Schwarz said 171 earthquakes – all magnitude 6.0 events or greater – were studied, and only 15 of them had no RF noise associated with them. In 26 cases, the time of the disturbance detected by the RF Seismograph failed to match the USGS-reported time of the quake. The latter likely because of the current low solar cycle and poor propagation.

Schwarz said that in 72% of the earthquake studies, the RF Seismograph was able to

detect an increase in noise on 80 meters, typically before and after the event.

“More analysis is needed,” Schwarz has concluded. “The study is still continuing and we need your help to set up more monitoring stations.”

RF Seismograph is now a project on Scistarter.com, facilitated through Arizona State University. Schwarz said Scistarter hosts “interesting projects for all ages and backgrounds” and “provides a vehicle for young people that are interested in science to get real live experience in this field.”

Contact [Alex Schwarz](#) for additional information.

The following references were included:

“Earthquakes in the Sky” Erik Vance Scientific American, October 2018, p. 44

http://www.ep.sci.hokudai.ac.jp/~heki/pdf/Scientific_American_Vance2018.pdf

Earthquakes Canada:

<http://www.earthquakescanada.ca>

U.S. Geological Survey

<https://www.usgs.gov/>

Access to Study for 2017, 2018 (2019 is part of 2018)

<http://www3.telus.net/public/bc237/MDSR/Matches-RF-Seismograph%20and%20Seismic%20data%20for%202017.pdf>

<http://www3.telus.net/public/bc237/MDSR/Earthquakes%20visible%20with%20RF-Seismograph%202018.pdf>

Download and Install RF-Seismograph for Linux and Raspberry Pi

<https://groups.io/g/MDSRadio/>

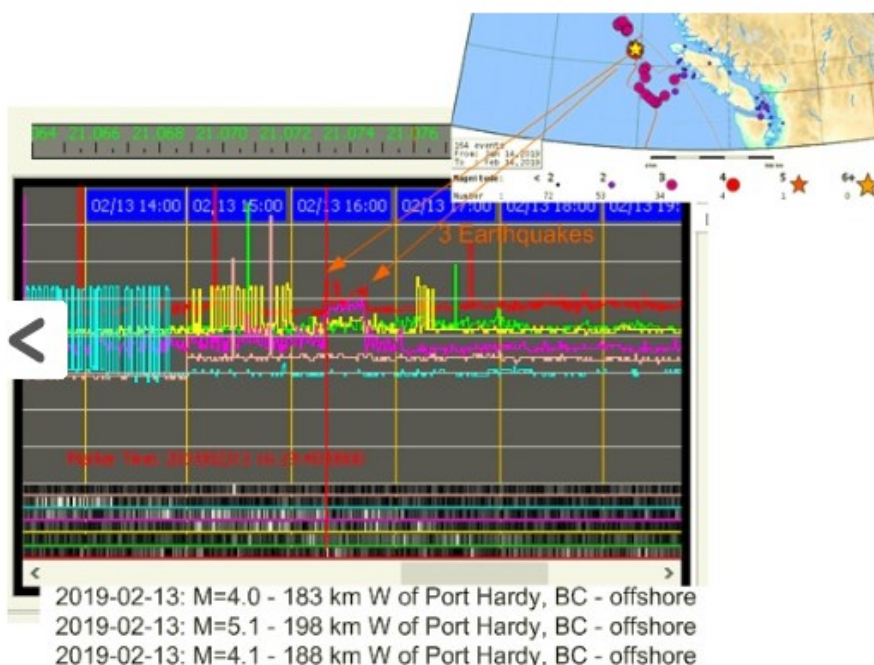
Download MDSR software for PC from:

<http://users.skynet.be/myspace/mdsr/>

The PDF available to download.

<http://www.arrl.org/news/ve7dxw-s-rf-seismograph-may-be-real-seismograph>

Many thanks to Alex for his excellent presentation.





Field Day 2019

Only Seven Weeks To Go

Field Day planning is moving ahead. Jason has led several meetings this year to craft the deployment and staffing plan for this year's Field Day, to be held June 22-23 from 11am to 11am.

As in previous years, there will be a pre-setup breakfast at the Kalmar Restaurant at King George and 80th Avenue from 08:00 to 09:00, after which we will fan-out to various tasks. Set-up starts at the site at 11am Friday.

This year the Incident Command System (ICS) is being implemented for Field Day planning. ICS is a management system used universally by emergency services, and is designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. ICS is normally structured to facilitate activities

in five major functional areas: command, operations, planning, logistics, Intelligence & Investigations, finance and administration. It is a fundamental form of management, with the purpose of enabling incident managers to identify the key concerns associated with the incident—often under urgent conditions—without sacrificing attention to any component of the command system.

While Field Day is by no means a critical incident, it does involve extensive pre-planning of a complex deployment involving all major ICS components. There is also a need for adjustment of that plan to address developing conditions. It is a useful tool because it exposes us to the structure and terms that we will work under should Amateur Radio become involved in an actual emergency event.

~

No, the planning team are not in the weeds. They are at the OTC, reviewing deployment for Field Day



May 2019

Operations & Training Centre News

John Brodie VA7XB

A Few Ideas of Worthwhile Projects for the Next Fiscal Year



There is not much to report in the way of activities this month, other than to say that the high-power triplexer/diplexer/bandpass filter project is complete and working. Consequently, we are now in a position to operate two high power HF transmitters simultaneously on the same antenna without risk of mutual interference or damage to receiving equipment. Reported elsewhere in the Communicator is a discussion of the testing methodology and technical results for this project.

It is time to start thinking about what should be our spending priorities for the next fiscal year, beginning June 1. Ideas from members are welcome as long as they fit into our constitutional purpose. In that regard, any suggestions will be prioritized according to the extent to which they enhance our ability to deliver one or more of the following:

1. Public service and emergency preparedness
2. Certification and training
3. Technical advancement

Here are a few suggestions, all of which are consistent with at least one of the foregoing objectives.

This year the Public Service Committee is purchasing a VHF/UHF radio with built-in terminal node controller (TNC) for use at the OTC plus a directional antenna along with hardware, cable and power supply as part of the public service/emergency preparedness commitment. This equipment represents the first step in our effort to modernize messaging through use of packet, thus moving away from manual NTS forms. The Public Service Group proposes to build on this digital foundation in the following years, so that the OTC becomes a fully-equipped satellite to the Emergency Operations Centre at Firehall 1.

A related high priority is to secure a microwave link to the BC WARN network, which requires raising the antenna at the OTC to get over marginal obstructions in the line-of-sight to a node at Concord tower. With BC WARN our ability to reliably communicate via packet (Winlink/RMS Express) within the City of Surrey and beyond will be enhanced. Equipment requirements are currently being assessed with the BC WARN team and there may be a need for acquisition of additional hardware. The biggest challenge is to erect a higher tower.

During an emergency, our newly purchased 3 kw generator and refurbished 5

kw generator would keep us in power only as long as the fuel holds out, which may be a severe limitation. So It has been suggested that we should have a solar panels at the OTC to charge batteries and provide power to the radios for an indefinite period.

Two of our members are currently working with the Neighbourhood Emergency Preparedness Program (NEPP) for the West Panorama Ridge Ratepayers Association to develop an emergency communications plan which, if successful, may serve as a model for other neighbourhood groups. Our main contribution to NEPP would be the offering of courses in order to encourage a sufficient number of members of this particular community to become certified, trained and capable of providing emergency communication when needed. To be fully effective and allow for attrition, it is expected that over the next few years, at least 10 members (annually) of this particular community group should become involved, equipped and committed to the amateur radio network. They will require assistance in setting up their stations and learning how to use their radios to communicate effectively.

HF items under consideration are a power winch to raise the tower, a more advanced controller for turning the beam, and a linear amplifier to match the Flex 6600. With this second amplifier, we would be able to make full use of our new bandpass filter project and thus double the number of operators that can participate in a radio event. On the premise that we will eventually have the capability for remote operation of OTC radios, we will ultimately need appropriate switching for antennas and radios.

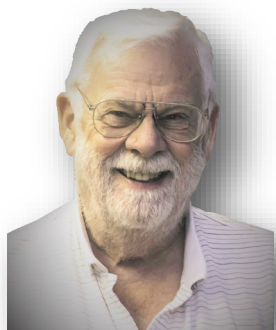
Many VHF enthusiasts are moving to digital voice and it has been suggested that we purchase and install a "Fusion" repeater at our repeater site and pair it with capability for digital voice at the OTC.

One more recent suggestion is that SARC set up a monitoring station at the OTC to supplement the RF Seismograph project of Alex Schwarz VE7DXW (described elsewhere in the Communicator). The feasibility of this at the OTC is currently under discussion.

The foregoing are a few of the ideas that have been brought to our attention. Do you have others to suggest? If so, please let your Executive know about them as soon as possible.

~ 73, John VA7XB





The Contest Contender

Jim Smith VE7FO

WPX SSB 2019—SOAP

Well, that was a bit of a roller coaster ride. Station is in disarray as I'm (still) in the midst of upgrading it to two op positions and one Master a la N1MM. Not helped by the recently crashed hard drive on the main op position. Rather than op from the 2nd position, which isn't really properly set up yet, I shifted its hard drive to the main position some days ago thinking that that's all I need to do to get on the air.

Hah! The contest has started and I'm still trying to remember how to set up the MM voice keyer function keys. OK, got that figured out but now getting messages that MM can't find the .wav files needed. Well, I know exactly where they are - on the defunct hard drive. I also know that they were never installed on the 2nd op position. Guess I'm going to have to regenerate them.

There was a time when this would not have been difficult but now suffering from CRS syndrome. OK, start up Goldwave sound editor. Hmm... seems to be different than it used to. Fiddle around a bit and can't figure out how to get audio from the mic into it. Maybe I'll have better luck with Audacity. Nope. Doesn't help that I'm tired and crabby. One contest hour has elapsed. I give up on the voice keyer and conduct a pre-emptive search for throat lozenges. Found them and commence to check out the bands. No spots on 10. Plenty of spots on 15. Too bad they were for stations I couldn't hear. (Total Qs made on 15? A magnificent 3.) Sighed and started S&P on 20.

Called somebody and . . . WHAT THE HELL IS THAT RACKET? And why is the amp putting out full power when I'm in receive mode? Shut off the VOX and all quiet again. Oh no. Horrible RF feedback. What am I going to do about it? Contemplated taking the easy way out and spending a few hours on Sudoku puzzles but remembered all the BIC admonishments I've heard over the years. OK, find a snap on ferrite and put it on a lead. But, which one? Who cares, probably not going to do anything anyway. So, snapped it on the mic lead and, voila, problem fixed. Muttered a few, "Take that, Murphy" while basking in the glow of having demonstrated my superior trouble shooting skills.

OK, what's happening on 20? Really busy. Heard an enormous number of lids who couldn't get the exchange the first time. "Number?, number?, my number?, what is my number?, please, my number? When I started making Qs I found out why. There was deep QSB going on. In many

cases, if you didn't complete the Q in about 30 secs or so the other station would totally vanish for what seemed like eternity but was probably about 30 seconds. Managed to make 9 Qs in hour 2.

Was very pleased when my guest op (Guy, VA7GI) showed up for hour 3 and I could escape. He also found cndx really rough and made only 39 S&P Qs before having to leave during hour 7. Tells you something about cndx when an experienced op with a K3, Alpha 9500 and Yagi at his disposal can get the rate up to only 8/hr. Called it quits in hour 8 (1 am local) and went to bed, having worked a number of domestic stations but only 2 Russians and 1 JA. 73 Qs in the log, all S&P.

Back at it in hour 19. Took a break during hours 25 and 31. 175 Qs in the log. Hours 40 to 42 199 Qs Switch to running and hope the throat lozenges hold out Hour 43 267 Qs, Hour 44 320 Qs, Hour 45 395 Qs, Hour 46 425 Qs, Hour 47 440 Qs, Wow!

Near the end I was getting tongue-tied and explained to those waiting their turn that my mouth was getting disconnected from my brain. Someone responded with, "I know exactly how you feel!" This was the first time in years I didn't use a voice keyer. I understand now why people don't like them and find them too impersonal. I found I was adding little comments which made it more fun. For example, someone's exchange was 128. I just couldn't get the 8, although no trouble with the 1 or the 2. Finally, in a stroke of genius he said, "Ocho ocho ocho," which I got right away and said, "Why didn't you say that in the first place?" then listened to his laughter as he slid down the next fade.

I tried out the lives cores site accessible from MM. I set my sights on a local M2 station. My two hour late start didn't help but I gradually crept closer and closer until, in the last hour I passed them. My elation was somewhat deflated when I learned that they quit a couple of hours before the end. Still, it was motivational and I will continue to do that.

Thanks for the Qs everyone and especially for your patience. Looking forward to WPX CW and, maybe, FQP 73.

~ Jim VE7FO

SURREY AMATEUR RADIO FoxHunt

HIDDEN TRANSMITTER EXERCISE & HUNT

FREE EVENT - OPEN TO THE PUBLIC

SATURDAY MAY 11, 2019 at 9am

Crescent Park, South Surrey



Pre-hunt Coaching,
Registration &
Instruction 9am
FoxHunt 10am—Noon

Location See
QR Code Below

If you are a beginner and do not have a radio, come anyhow, we have loaner equipment, or we can team you up with someone experienced.

Talk-in 147.36+ (110.9 Tone)

All are welcome but if you stay for the BBQ (\$10) we ask that you RSVP to

jamesadf77@gmail.com



SURREY doorsopen

DISCOVER THE STORY BEHIND EVERY DOOR

FREE EVENT - OPEN TO THE PUBLIC

SATURDAY JUNE 8, 2019 11am—4pm

Former Surrey City Hall North Annex 14265 57 Avenue Surrey



We provide emergency communications services to the Surrey Emergency Program. Come and explore the exciting world of Amateur Radio



Surrey Emergency Program Amateur Radio



Surrey Amateur Radio Communications

May 2019



Radio Ramblings

Kevin McQuiggin VE7ZD/K7MCQ

A Tale of Two Hams

My wife Laura (VE7LPM) and I live in an old house on Smith Avenue in Burnaby. In fact, I have lived there most of my life. I came to the house in the summer of 1981 as a renter, and over the next few years was able to convince the owner to sell me the property. It was expensive for a young police officer, but has turned out to be a good investment. That aside, the place is centrally located near Boundary and Kingsway, and Laura and I have found it so convenient to practically everywhere that we have never thought too much about moving. We respected the old place and have tried to keep it up.

Over the years the house supported all my amateur radio activities, my two towers, and a not insignificant antenna farm. I participated in contests, deployed dozens of odd antennas, made my first satellite QSO from the back deck, completed DXCC, worked my first EME contacts, and even (literally) blew up my 2 kilowatt 2-metre linear there in 1989. Ka-boom!

The house was built in 1925, and despite its age, it's in pretty good shape. See Figure 1. I had some time in the past couple of months, so thought that I would do some investigative work to find out something of the history of our home as it approaches the end of its first century.

What I found is the subject of this month's column.

House Genealogy

All we knew about our house was that it was built in 1922¹ and that it had had a few owners before I moved in in 1981. A retired police colleague had done research on his own house in Victoria, and suggested that a good starting point for finding out more is the "City Directory".

City Directories were published annually and date from a simpler time where residents were not worried about financial scams or identity theft, and when privacy was not a significant social issue. Directory representatives would visit all homes in the Lower Mainland (and the province) annually and gather details of residents, owners, and occupations of those living in the community. The information was published in a thick large-format book indexed by streets and surnames. Directories for all of BC going back to 1860 are now available online courtesy of the Vancouver Public Library (VPL)².

¹ Our assumption, soon proven wrong!

² <https://bccd.vpl.ca/>



Figure 1 - Our House Today

I used the VPL site to research our house based first upon its address. Strangely, I could find records of our home going back to the early 1960s, but for earlier years our address did not show up in the City Directories. This was odd!

I had to try a different approach. Each City Directory also indicates street and cross-street, so by looking at the combination of "Smith Avenue" and looking for cross street names, I learned that sometime in the late 1950s the block numbers in Burnaby were all "reset" to match the block numbers used in the City of Vancouver. I confirmed this renumbering by referring to historical street maps³. I could not find our house prior to about 1960 because the house number had been changed!

Armed with the new block number (the 3800-block rather than the current 5400-block), I was then able to track our home and its owners/residents back to 1925. Prior to 1925, there were no records. This too seemed odd. I discovered through inquiries at Burnaby City Hall that our home had been built not in 1922, as Laura and I had always thought, but rather, in 1925. This was our first interesting discovery. City Directory searches confirmed that a new house and new residents showed up at 3854 Smith Avenue in 1926.

By googling our old street address, I was amazed to discover that City of Vancouver Archives⁴ had a photograph of our house in 1931⁵. See Figure 2. I deduced through some online research in

the Vancouver Archives and some corresponding VPL information that our home had been photographed as part of an advertising program for a 1930s-era furnace company. Somehow the photos had been preserved. Very interesting!

Back to the City Directories, I was able to track the owners and residents of our house from 1926. Armed with resident names, I was able to cross-reference from the street index to the directory's name-based entries and find out about occupations and businesses that the residents had been involved in.

This was interesting and I was able to build a chronology of owners and residents. Laura and I are the sixth family to live here. I googled the past residents, their occupations and businesses and discovered that prior to 1946 the house had been owned by a fellow who was involved in the auto business; and next by a large family who also owned another house on the block. One of their daughters attended UBC.

I learned that in 1946 the house had been sold to a fellow named Edward James Fowler. Naturally, I thought I'd do a bit of research on Mr. Fowler as I had on the other owners of our home. See Figure 3.

	SMITH (Bby) N from 4800	247
	Kingsway	252
	3851*Butler E -DE2040R	258
	3881*Lutz E L -DE2480L	256
	3681 (rear) Sommerville W A	257
	Sandell Av ends	
	3708*Wilson R T -DE0895L	
	3709*Houghtaling K A	280
	-DE2040L	
	3713*Prokopetz G	280
	3718*Fedler H A -DE0897L	283
72R	Maxwell intersects	288
81L	3807*McArthur Mrs M F	287
	-DE0467R	289
	3844*Broderick W F	270
7L	-DE0467L	271
1008Y	3850*... G O	271
7R	-DE1258M	272
	3854*Fowler F -DE1690R	273
R	3881 New House	273
	3901 New House	273
35M	3905*Crouch W L -DE1690M	278

Figure 3 - City Directory for 1946, "F. Fowler"

³ See "Old Maps Online" at https://www.oldmapsonline.org/en/Vancouver%2C_British_Columbia

⁴ <https://searcharchives.vancouver.ca/>

⁵ <https://searcharchives.vancouver.ca/pacific-oil-burners-house-at-3854-smith-avenue>

⁶ E.J. Fowler lived here with his parents who moved from Saskatchewan (father Frank)

Figure 2 - Our House on July 21, 1931



May 2019

Serendipity

Googling “E.J. Fowler” and our old address, I discovered that Edward James Fowler was known as “Ted”, and that he was, in fact, VE7VO. Ted Fowler was a very well-known personality in the local amateur radio community. He had been in Vancouver since at least the late 1930s⁷.

A prolific contester and DXer with several awards, he had been written of in QST and “Shortwave Magazine”, another popular radio magazine of the 1930s and 1940s. This was very interesting!



Figure 4 - DX Convention, Vancouver 1958

VE7VN—J. R. H. Wells, 5474 Trafalgar St., Vancouver
 VE7VO—E. J. Fowler, 3854 Smith, New Westminster.
 VE7VP—T. H. Holtby, 3846 W. 34th Av., Vancouver

Figure 5 - VE7VO in the Fall 1947 Radio Amateur's Callbook

See Figure 4 for a photo I found in the BC DX Club Archives of VE7VO and colleagues at the 1958 DX Convention in Vancouver⁸.

Spurred to do further research, I next discovered that all of the old Radio Amateur Callbooks from the 1920s onwards⁹ have been scanned and made available by the Internet Archive¹⁰ - an excellent site for information on radio and television history and on old radio technology.

I downloaded several callbooks from the late 1940s and 1950s and looked up VE7VO. See Figure 5 for VE7VO's entry in the Fall 1947 callbook. Note his address is that of our house at (then) 3854 Smith Avenue, shown as “New Westminster” rather than in Burnaby.

I thought next that I would track VE7VO backwards from his purchase of our house in 1946. I learned two more interesting things. First, the VE7 call district did not exist prior to 1939. This was news to me! By searching for “Fowler” in the 1939 Callbook¹¹ I learned that VE7VO was in fact VE5VO at that time, but that he was already in Vancouver, as shown in Fig. 6.

The second thing I learned is that Mr. Fowler was a commercial pilot, as I am. Unlike me, however, he had military flying experience. I decided to follow this lead.

VE5VO had served with distinction in the Royal Air Force in Britain during the war. As a pilot he flew several missions over Europe, and then after cessation of the war had been part of the RAF's mission to disarm the German Luftwaffe.

VE5UZ—R. W. Lewis, 3642 Point Grey Rd., Vancouver,
 B. C.
 VE5VO—E. J. Fowler, 1220 Seymour St., Vancouver, B.C.
 VE5VP—T. H. Holtby, 3846 W. 34 Av., Vancouver, B.C.

Figure 6 - VE7VO was VE5VO prior to WW II

⁷ See below. Information from a 1930s Radio Amateur's Callbook

⁸ http://www.bcdx.org/images/BCDX_small1.jpg

⁹ <https://archive.org/search.php?query=callbook>

¹⁰ <https://archive.org>

¹¹ https://archive.org/stream/Spring_1939_Radio_Amateur_Callbook

"Shortwave Magazine" included a story in April 1946 about how Flight Lieutenant Fowler, VE5VO was instrumental in restarting amateur radio in Europe post-war¹². He was issued the callsign D2VO. See Figures 7 and 8.

Post-war, Mr. Fowler was listed in the City Directory as a pilot and technician for TCA: Trans Canada Airlines, the forerunner of Air Canada. However, I determined that he had changed careers by the 1950s and was involved in technical management of commercial radio transmitters¹³. He moved to Surrey in the early 1960s and passed away in 1983. He was survived by a son, but there is no record of his son having an amateur radio license¹⁴.

Other Interesting Observations

VE7VO lived in our house for about fifteen years, until about 1960. He was active in amateur radio at that time. I started thinking about whether I could find evidence of where his shack was, or perhaps where his antennas had been located.

When I moved into the house in the summer of 1981, I noted that one of the basement window frames had a number of strange large holes drilled in a linear fashion in its bottom frame. I plugged the holes to keep mice and insects out, and eventually the window itself got replaced. Now I am thinking that these holes were likely the ingress points for feedlines. I had had evidence of "hamming" right before my eyes but had missed it!

A few years ago, Laura and I were doing yard work, as couples do. She was digging up a rough patch in the backyard to smooth it out, and

118

SHORT WAVE MAGAZINE

APRIL 1946

Amateur Radio in Germany

Further to the note which appeared on p. 45 of the March issue, we now have authoritative information on the latest position regarding amateur activities in the British and American Zones of Occupation. There is, however, still no leakage of news from behind the iron curtain.

It seems that, due mainly to the efforts of F/Lt. E. J. Fowler (VE5VO-D2VO) and a small band of enthusiasts, the British Signals Communication Board agreed to give qualified individuals of British nationality the same facilities as we enjoy over here, subject only to a power limitation of 50 watts. Licencees need not necessarily be pre-war holders of callsigns, but if not, must be in one of the Service

trades qualifying for exemption. The BSCB acts as the licensing authority, the detailed work having been undertaken by D2VO. He also issued the callsigns, from the block D2AA-D2ZZ. F/Lt. Fowler has now been posted back to England on his way home to Canada, and his duties as Organising Secretary have been taken over by Capt. J. E. Terry (G4DI-D2DI).

Below is the list of 25 calls, with QRAs, which have been issued to date in the British Zone. The Americans, working on the same lines as our people but with more liberal notions as to power, have issued no less than 130 licences in their Zone, in the sequence D4AAA-D4AFQ. We have the QRAs, but such a list is too formidable for publication in full. Readers may, however, obtain the QRA of any D4 in this sequence on application to our office. But we can *not* forward cards or other correspondence.

Figure 7 – Shortwave Magazine, April 1946

D2VO—F/Lt. E. J. Fowler (VE5VO), H.G. 84 Group (Disarm), B.A.F.O.-B.A.O.R.

Figure 8 – D2VO in Summer 1946 Radio Amateur's Callbook

unearthed a large turnbuckle. It was about a foot long and encased in rust. She showed me the turnbuckle and I remember thinking "hmmm, when it was new that would've been great for securing a tower guy line".

I didn't recall losing a turnbuckle for my own towers, which were up at the time, but never really thought more of it. The turnbuckle got tossed into our metal recycling. Perhaps this was a leftover from one of VE7VO's antennas.

The only other further evidence I have of antennas or antenna supports is weak, but I will present it here as it highlights another valuable resource for people doing historical amateur radio research.

¹² Shortwave Magazine is archived at <https://www.americanradiohistory.com/Archive-Short-Wave-UK/40s/SWM-1946-04.pdf>

¹³ City Directory listed occupation

¹⁴ <http://search-collections.royalbcmuseum.bc.ca/Genealogy>

May 2019



Figure 9 – VE7ZD's (VE7CPT's) TH6 Yagi in 1985 and 2004

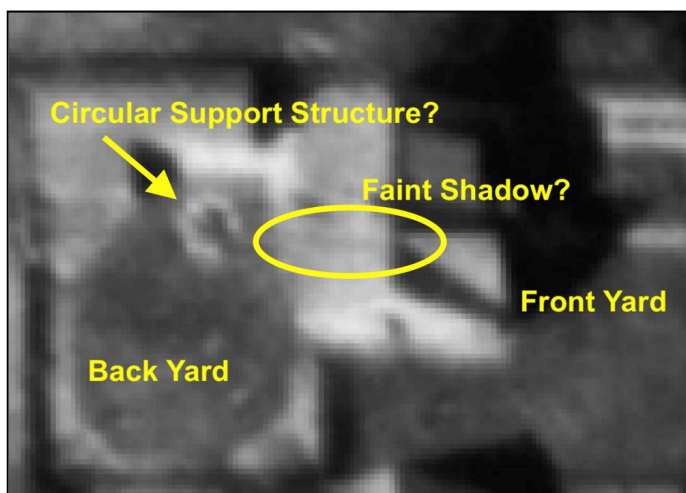


Figure 10 – House and Possible Antenna Support Structure in 1950

Many cities have begun to make archival aerial photos available to the public. These photos are integrated with modern GIS (Geographical Information Systems) and typically made available online. Burnaby is no exception.

I visited the City's "Burnaby Historical Aerial Photo Viewer", which contains zoomable orthophotos of Burnaby going back to 1930¹⁵. Heading back in time to 1930, I was able to look at our house and the neighbourhood and watch it develop over the subsequent decades. In particular, I noted that my then-state-of-the-art "TH6" Yagi antenna was clearly visible in photos from the 1980s to the early 2000s. See Figure 9. As an aside, note how the quality of these photos has improved due to advances in technology.

Maybe I could use historical orthophotos to find evidence of an antenna or tower!

I turned next to orthophotos from the VE7VO period, 1946 to approximately 1960. While I could not find obvious evidence of an antenna, I did note, however, the presence of an odd structure in the backyard of the house that cast a long shadow relative to other elements in the picture. The photo is quite grainy, but you can make things out. See Figure 9.

A tower or antenna support pole? I will likely never know, but the structure's location and characteristics do not look like a fountain, table, or other common garden element. There is no evidence of the structure in our backyard today.

Interestingly, the structure was within about two metres of where I placed my own tower base in late 1981 after I moved into the house. If the structure in the 1950 orthophoto was a tower or antenna support, it shows that hams even across time think alike!

Conclusion

This was an interesting journey into amateur radio history, and the history of one radio amateur, and his residence in the period from 1946 through about 1960. I found out a lot about the history of our home, and located a fantastic 1931 photo of our house, showing it to be in essentially the same condition as it was nearly ninety years ago.

It was amazing to think that another ham, and such a prominent one, had lived in the same house as Laura and I, and that VE7VO and I have both enjoyed the challenges and thrills of amateur radio from this location. I wonder if we chose the same room for our shack?

¹⁵ <https://burnaby.maps.arcgis.com/apps/webappviewer>

An ongoing project for me is to try and find an old QSL card from VE7VO, or even VE5VO. QSLs usually give the op's address and often list station details and other information which would be of great interest to me. It would be *really* neat if VE7VO's QSL included a photo of his QTH, or of his shack!

One final point. In the late 1970s and early 1980s, I was extremely active on the bands, and was a member of a couple of local radio clubs, including the "Fraser Valley DX Club", FVDXC. We met in Surrey and Langley on a monthly basis. I do not recall ever meeting Ted Fowler, VE7VO, but it is possible that, as a prominent DXer

(then with decades of experience) and a then-Surrey resident, that he might have been a member of the FVDXC as well. If he was, then I wish I had met him, and that the fact that serendipity had led me to live in his old home had come to light. We would have had a lot in common, and meeting him would have been a really interesting experience!

That's it for this month! Feedback can be directed to the Editor, or directly to me at mcquiggi@sfu.ca. Have a great month and 73.

~ Kevin VE7ZD / K7MCQ

Solar minimum will be long and deep, experts predict

An international panel of researchers led by NASA and NOAA has released a new prediction for the solar cycle.

According to their analysis, the current solar minimum is going to deepen, potentially reaching a century-class low in the next year or so. This will be followed by a new Solar Max in the years 2023-2026.

Visit Spaceweather.com to learn how this affects space weather and life on Earth.

Feedback...

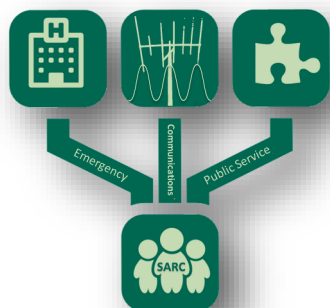
Dear Editor John,

I was referred to your newsletter by the April 3 ARRL Contest Update and boy-oh-boy am I glad! What a fantastic publication in content and layout! As the editor of the Winona (Minnesota) Amateur Radio Club newsletter and a retired editor/communicator for University of Wisconsin-La Crosse I appreciate the work that goes into such a publication and recognize an outstanding example.

73, Bob

Bob Seaquist W9LSE

May 2019



Public Service

Amateur Radio Serving The City Of Surrey

Public Service Principles

Public Service Report

Don Hamilton VA7GL



Seattle Communications Academy. What did you miss?

The 21st annual Seattle Communications Academy is a gathering of most of the Public/emergency related organizations in the Pacific North West.

They gather to exchange views and listen to what has been learned from the experience of others members.

Here's what I gleaned from the seminar. Once a disaster takes hold it becomes the master of the events, you're now stuck on the worst ride on the "Act of God theme park". Governing how wild the ride can be, is based on the type and strength of the event. So far, there hasn't been too much serious activity, in the Pacific North West, thank goodness.

We listened to several presenters talk about the Puerto Rico Hurricane challenges. One news paper made this statement. "Five days after Hurricane Maria made landfall in Puerto Rico, its devastating impact is now becoming clear. Most of the U.S. territory currently has no electricity or running water, fewer than 250 of the island's 1,600 cellphone towers are operational, and damaged ports, roads, and airports are slowing the arrival and transport of aid."

Stop, go back and read the article again, did you notice that 5 days had passed, and still no water, electricity and cell service. How

do you even try to call for help? I can't imagine being without these essentials for 5 days or more. Some estimates are for up to 21 days of loss of service.

The challenge for Public Service/emergency Volunteers is we need to be prepared, first looking after our families and property. Then we can lend our expertise to helping the professionals.

The type of help most wanted sounded to me to be skilled trades people and components, that were in very short supply. Example they couldn't fix the cell towers because; there were not enough:

1. Parts available to make the repair
2. Riggers to repair the tower, to insure it's safe to climb
3. Professional tower climbers to perform the repairs

For example, have you ever been told that there were no parts or a technician available in the system to fix your car. Furthermore, the parts you need won't be scheduled for another 2-3 months. These were some of the challenges for the citizens of Puerto Rico are facing. Plus, there are no roads to facilitate the delivery of essential services.



The US Federal government sent 50 Hams to Puerto Rico to assist with communications. They took their own "Go" kits. By the way, the best way to ensure the kits were available in working condition was to pack them in their carry on. Oversize and overweight, some took several days to get delivered.

How does this affect us? Well, the biggest concern, along the Pacific coast is a major earthquake. With the potential to disrupt life for a hundred miles inland, it is sobering stuff. We will discuss what you can do to be of the most effective assistance to your fellow residents of Surrey.

Next month's article will discuss what preparations we should be making to get us ready for the next wild ride.

~ Don VA7GL

SEPAR Report

Gord Kirk VA7GK

SEPAR Surrey Emergency Program Amateur Radio is a group of volunteers who plan and train to help assist Surrey with Communications during times when emergency communications are needed. This may be as a result of a storm or a disaster which impacts the traditional communication systems such as cellular or home phone lines. We have, in the past, assisted in helping notify residents of the need to be ready to evacuate due to potential flooding. Amateur Radio is often referred to as the way to communicate "when all else fails".

To be prepared to assist during these times we train with others, and learn how to use our equipment, how to handle messages which need to be delivered, and how we work within the community organizational structure.

SEPAR is part of the City's Emergency program under the Surrey Fire Service. We are not a closed group and encourage others to volunteer and join us as we train to provide communications to our neighbourhoods and city. Every year we have many opportunities to raise awareness of Amateur Radio and its role in Emergency Communications.

We have several events coming where we would like to invite you to come and join us. We will answer any questions you have about volunteering with SEPAR.

June 8 2019 Saturday 11:00 - 4:00pm Surrey Doors Open

- SEPAR will participate with this event promoting Emergency Program work in Surrey with Amateur Radio. Come and see the SEPAR/SARC Operations and Training Centre Radio room.

June 22-23, 2019 Field Day

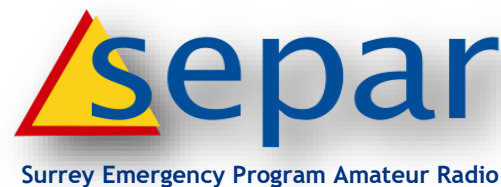
- This weekend event we will set up our radios as we would during a disaster and talk to other radio operators around North America.

July 1, 2019 Canada Day Bill Reid Amphitheatre Grounds.

- SEPAR will set up with the other Surrey Emergency Programs at the Canada Day Celebration to promote both SEPAR and the other Emergency Programs to the public.

If you are able to support any of these activities please let me know via email VA7GK@shaw.ca

~ Gord VA7GK
SEPAR Coordinator



May 2019



KB6NU's Column

Dan Romanchik, KB6NU

Getting Loaded (Antenna-wise, Anyway)

Three great club newsletters:

<https://www.kb6nu.com/three-great-club-newsletters-sarc-pcars-erc/>

Thanks Dan!

A couple of years ago, I homebrewed a "Cobra" antenna (<https://www.kb6nu.com/yet-another-new-antenna-the-cobra/>). It's a doublet antenna, meaning that it consists of two elements connected to a center insulator, where it connects to a feedline. The unique thing about the Cobra antenna is that each element consists of three parallel conductors connected in series.

My antenna uses a lightweight, three-conductor rotor cable that used to be available from Radio Shack. The feedline is 450 Ω ladder line that connects to an antenna tuner to give me multi-band operation.

Connecting the conductors in this way is supposed to provide "linear loading." Somehow, running the conductors in parallel is supposed to increase the antenna's effective length. My antenna is only 73-ft. long, but it easily tunes up on 80m.

The ARRL Antenna Book has a short section on linear loading. It says that linear loading is a "little understood" alternative to inductive loading that can be applied to almost any type of antenna. Furthermore, "...it introduces very little loss, does not degrade directivity patterns, and has low enough Q to allow reasonably good bandwidths."

As I mentioned, I've been using this antenna with good results for a little more than two years now. When I first put it up, someone mentioned the concept of linear loading to me, but not

being an antenna guru, I didn't 'give it much thought. About a week ago, though, I ran across a link to the page Short Ham Antennas for HF (<https://www.hamradiosecrets.com/short-ham-antennas.html>). That got me thinking about the topic again.

This page describes a way to build a linearly-loaded dipole antenna with a feedpoint impedance of approximately 35 Ω . This allows you to feed it with coax instead of the ladder line that I use. The author uses 390 Ω ladder line for the elements. He says it's commonly available, but I don't think I've ever seen 390 Ω ladder line. You could probably use 450 Ω ladder line by adjusting the element lengths a little.

At that point, I started Googling. The next linear-loaded antenna design that I ran across is a design from M0PZT (<http://www.m0pzt.com/40m-linear-loaded-dipole/>). He built his elements from some sturdy wire and homebrewed spacers made from PVC pipe. He's used this design for the 40m elements of a fan dipole covering the 40m, 20m, 15m, and 12m bands. Only the 40m elements are linear-loaded.

I also found a design for a linear loaded vertical antenna for 40m and 80m (<https://www.qsl.net/pa3hbb/ll.htm>). This antenna is only 7.736m, or 25.4 ft. tall. Of course, it requires a good radial system to work well, but it will work a lot better for DX than a low doublet or dipole.

Finally, there's an eHam discussion on linear loading (<https://www.eham.net/ehamforum/smf/index.php?topic=84418.0>). Unlike a lot of eHam discussions, this one is quite civil. It's worth reading if you're interested in the topic.

So, if you're thinking of getting loaded, errrrr, I mean loading your antennas, here's a method for you to consider. It works!

~ Dan KB6NU
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When he's not trying to figure out which way current flows, Dan blogs about amateur radio at KB6NU.com, teaches ham radio classes, and operates CW on the HF bands. Look for him on 30m, 40m, and 80m. You can email him at cwgeek@kb6nu.com.

Learning CW? Some Advice...

I have started learning Morse code (CW) and here's what I have found so far on my journey.

- Don't start by learning the code visually - I initially did this and it has hindered my learning as I try and 'interpret in my head' when listening
- Take small bites and nibble slowly - don't try and learn everything at once as it causes frustration. Take 15min / sitting and let it happen
- Listen to code at 30wpm. This forces you to hear the sound rather than the individual dits and das.

When I am better, there are short podcasts that are in Morse code. Right now I am not there yet ;)

There is not enough here for a full article and my learnings are likely well understood by the Elmers - but thought I would share.

<https://lcwo.net> has been the most useful tool for me.

~ Jason VA7ITJ



Feedback...

Thanks to the ARRL Contest update, I have just stumbled across The Communicator. I found the April issue so interesting and so full of information that I have printed it out in full.

I have been trying to get the NZART to publish our [BreakIn](#) on the web, just as you have done, and only met extreme reluctance. I'll be showing your excellent efforts to a few people.

Best 73s
Jim ZL1LC

Editor's Note: It is a very interesting magazine, click on the link above and have a look—Ed.

May 2019

CW Prosigns

James Wades WB8SIW

Operating Standards—Fact or Fiction?

DE

CQ

K

K.N

BK

AS

A recent discussion on the SKCC email reflector revolved around the issue of the proper use of the CW prosigns. This discussion arises regularly on different forums and, invariably, someone will provide a link to a document entitled IARU Ethics and Operating

Procedures for the Radio Amateur. This document was created in Europe and has been promulgated by the IARU and, indirectly, by the ARRL.

Generally, the IARU document is a very good one. Obviously, the authors put a lot of work into creating it. Unfortunately, it contains a variety of incorrect recommendations and examples, that reveal a lack of research or knowledge of historical antecedents.

Peer Review and Public Comment

When standards are developed for industrial practices, a peer-review process is typically initiated. A committee of professionals or experts engages in a detailed examination of proposals to determine their efficacy or to identify any oversights. This is often followed by a release to others in the industry for comment. Afterwards, a voting process is conducted by the standards committee based on the feedback. Those that do not vote or otherwise participate in the process typically assent to new standards.

While the Amateur Radio Service does not have the resources of industry, organizations such as the IARU do have the ability to release draft documents for public comment. Those drafting documents can also conduct a bit of research or consult experts in their avocation.

So, let's examine just a few examples from the IARU document with which the author disagrees:

The prosign SK:

This one is a favorite. Not only is the citation incorrect, but its recommended placement within a transmission runs contrary to historical precedent. Quoting from the IARU guide:

DIT DIT DIT DAH DIT DAH is the prosign 'SK' (from 'stop keying') and not 'VA' as published in some places.....

First, "SK" never stood for "stop keying." Rather; it originated as "30" from the Western Union 92 Wire Codes meaning "close of work." "30" was typically sent at the conclusion of sending a file of telegrams (e.g. on a duplex circuit), or at the conclusion of an article transmitted in press work. "SK" is actually the numeral 30 when transmitted in American Morse Code.

Second, "VA" is also a long-accepted way of presenting the prosign. The admonition that "VA" is an incorrect representation is driven by the desire to reconcile the falsehood of the "Stop Keying" origin.

In another part of the IARU guide, it is stated that "SK" should always be sent after the call signs when concluding a transmission. This recommendation also runs contrary to decades of precedent. Here is a typical example from the Guide:

A typical way to gracefully end a QSO would be.... TKS FER QSO 73 ES CUL W1ZZZ DE G3ZZZ SK

As already mentioned, the prosign historically referenced message CONTENT. The call sign exchange functions only as a legal and

administrative mechanism. Historical antecedents within the Amateur Radio Service can also be easily verified. For

example, here is a citation from the 1953 Edition of the "Radio Amateur's Handbook" published by the ARRL:

*"SK-End of QSO. Recommended before signing last transmission at end of QSO.
Example.....SK W8LMN DE W5BCD"*

We can also see an example of proper historical antecedent in the Seventy First Edition of "Operating an Amateur Radio Station" published by the ARRL c. 1970s:

"....on CW, it's SK WB1ACZ DE W3AZD, and, if leaving the air, CL."

The prosign AR:

Here is another one from the IARU guide that is based on an artificial construct:

'AR' means 'end of message' or 'I am through with this transmission.' While 'K' means 'over to you,' etc. This means you should always terminate your CQ with 'AR' and never with 'K,' because there is nobody there yet whom you can turn it over to.

"AR" originates from the American Morse abbreviation "FN" for "finished." It has been historically transmitted at the conclusion of a telegram, train order, stock or commodities transaction, or a radiogram to indicate "end of message." Furthermore, I hate to differ with the IARU, but a "CQ" is not a message; rather it is a procedural mechanism in the form of a call to any station. "CQ" originates in British Railway practices, being a general call to all stations. Therefore, it was naturally adopted by radio amateurs for a similar meaning, a general call to any station.

Again, let's look at the 1953 Handbook:

Example: CQ CQ CQ DE W1ABC W1ABC K

....and from the aforementioned edition of "Operating an Amateur Radio Station:"

On CW: CQ CQ CQ DE N6TR N6TR K

In other words, because "CQ" essentially performs the function of establishing contact and is not a message, a very strong case can be made that "AR" at the end of a "CQ" is a bit of an oxymoron. Even if one were to cite military precedent, in which "AR" is used as a CW equivalent of "OUT," the recommendations in the IARU guide would still

be illogical, simply because a "CQ" anticipates a reply, whereas the proword "OUT" specifically forbids it.

The placement of "AR" in the transmission is also a topic of debate. Again, examining historical antecedents, the oldest and most time-tested use of AR is at the end of a telegram or radiogram. In a sense, one's information during a QSO, such as a signal report, QTH, name, etc., is a radiogram. It's the information one is conveying to the receiving station. The IARU guide generally eliminates the "AR" at the end of a transmission, or otherwise recommends that it be placed after the call signs at the conclusion of a transmission.

However, the proper method, based on a century and a half or more of precedent both in commercial and amateur practice would be, for example:

*"R UR RST 459 QTH MARION IL NAME JIM HW
CPY AR SP6AK DE WB8SIW K"*

In other words, in the latter case one is saying "end of message" and then "SP6AK DE WB8SIW OVER." Another way of looking at this is the fact that the call signs are NOT part of the message content. Rather, they are a procedural and legal mechanism, but the real message is the signal report, QTH, name and the query about copy."

The Importance of Process:

So now that we've deconstructed just a few examples from the IARU guide, it might be wise to ask the purpose of doing so.

Certainly, languages evolve, and one might argue that the way in which prosigns are applied is simply the result of an on-going

evolution of the "language of ham radio." As the hobby evolves, the purpose of the prosigns might also evolve. In that respect, modern radio amateurs certainly have the right to redefine operating procedures to suit modern conditions. However, the bar is a bit higher when promulgating standards, particularly when the IARU states:

This document was accepted by the IARU Administrative Council as representing their view on the subject. During subsequent Regional IARU meetings it was emphasized

May 2019

QNI NEWSLETTER

QNI is an independent newsletter published quarterly by James Wades, WB8SIW and dedicated to message handling and emergency communications. There are many interesting articles and I encourage all interested in message handling and emergency communications to check it out at its new website:

<http://qni-newsletter.net/>

that the document be made available to the Amateur Radio Community via all available means, at no cost, and in as many languages as possible.

The document has since been translated into more than 25 languages. In some countries the document is also offered in printed format and many Amateur Radio websites have a link to the document. Our most sincere thanks go to all our friends who spent hundreds of hours to take care of these translations.

If you are going to distribute a set of STANDARDS worldwide and go through the trouble of translating a document to 25 different languages, then it seems reasonable that a proper peer review and reasonable research be performed first.

Another reason for this somewhat academic exercise is to expose the hegemonic influence of certain operating activities in the Amateur Radio Service. One can readily see the influence of the “contest” and “DX” culture in the IARU document, and its power to shape the very terminology of ham radio, often at the expense of other operating interests and activities.

The big dog in all of this is the ARRL, which has always been the lead society in the IARU. As new leadership takes the reigns at Newington, one of its goals should be a more egalitarian approach to standards, band planning and other practices. The League and its peers around the world need to recognize that a diverse constituency exists in the Amateur Radio Service.

With broad cultural changes and rapid technological evolution, this trend will likely intensify. By recognizing this increasing diversity and seeking the input of minority operating interests, one is likely to generate a better quality of service, whether that service is delivered in the form of documentation, magazine subscriptions, or organized operating activities.

Better research and attention to the details that exist outside of an author’s primary operating interest will also result in documents that better appeal to the broader community of radio amateurs, while also minimizing conflict between older and younger generations of radio amateurs, particularly when new procedures are introduced.

Lastly, this document exemplifies what happens when a committee takes it upon itself to promulgate standards without a formalized process designed to seek input from a broader sample of stakeholders. The Amateur Radio Service needs to take a good, hard look at how it does business and move away from the long-standing, top-down approach to a more regulated and transparent process, not just at the IARU, but within all of our national societies.

~ James Wades WB8SIW

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Shoes inspired by Morse code

The BBC reports Morse code inspired the creation of shoes which send toe tapping texts. A pair of smart shoes has been created to let industrial workers keep in touch via toe-typed coded messages.

The footwear was inspired by Morse code, but made possible by the latest communication technologies. BBC technology correspondent Rory Cellan-Jones meets the firm responsible at the Mobile World Congress in Barcelona. Watch the MWC 2018 video at

<http://www.bbc.co.uk/news/av/technology-43205947/morse-code-shoes-send-toe-tapping-texts-at-mwc-2018>

CBC: A Biography of a Telegrapher

The CBC recently interviewed Lavina Shaw of Port Coquitlam, BC, Past International President of the Morse Telegraph Club. In this biographical documentary, Lavina talks about her experiences working as a railroad and commercial telegrapher as well as her experiences as a woman working in a man's world. Like many telegraphers of her era, Lavina had a front-row seat to history. The CBC video is at: <https://youtu.be/mJi7d7vHWVA>

In addition to railroad and commercial operations (telegrams, cablegrams), the telegraph was widely used in a variety of applications such as stock brokerage operations, commodities and board of trade work, press operations, and so forth. Even the telephone company used Morse telegraphy extensively for its internal operations well into the post war era.

Radio amateurs in general, and CW operators in particular, will undoubtedly find this video interesting, not just for the human interest content, but for its insights into the antecedents of radiotelegraphy.

The Morse Telegraph Club is a non-profit historical and educational association dedicated to preserving the history and traditions of telegraphy and the telegraph industry. MTC members and chapters demonstrate telegraphy at historical events, design and construct historically correct museum exhibits and conduct presentations on the history of telegraphy. MTC also publishes an excellent quarterly journal entitled "Dots and Dashes, which includes articles on telegraph history and first-person accounts of telegraph industry employees.

For more information on MTC membership, please contact [James Wades WB8SIW](#).

We have arranged for Ms. Shaw to be a guest presenter at our September SARC General Meeting.



Trainee electronics engineer Chelsea Back writes in Design Spark about her first experiences with radio frequency circuits at: <https://www.rs-online.com/designspark/making-a-simple-am-radio>



Surrey Doors Open

A June 8th Special Event at the OTC

We have applied for, and again been accepted as a destination for the **Surrey Doors Open** program scheduled for Saturday, June 8th from 11am to 4pm at the OTC.



Surrey Doors Open is a one day event for organizations to invite community members to “discover the story behind every door”. This free event offers fun activities for all ages, behind-the-scenes guided tours, entertainment, hop-on-hop-off transportation and more! Almost 5,000 visitors attended last year.

If you have any questions, or require further information about this community event, please email doorsopen@surrey.ca.

John VE7TI is coordinating this event on behalf of SARC and Gord

Kirk VE7GK on behalf of SEPAR. As in previous community demonstrations of Amateur Radio, most recently the Scout's JOTA event, we intend to offer several stations geared to all ages. This will include Morse Code practise, Introduction to radio, HF contacts, contacts worldwide using Echolink and/or IRLP, hopefully a favourable satellite pass and, weather permitting, a fox hunt hidden transmitter activity.

A number of SARC and SEPAR volunteers are needed as welcomers, presenters, guides and operators. If you are available, please contact John VE7TI at communicator@ve7sar.net.

More information in the June Communicator.

~ John VE7TI

FREE EVENT

SATURDAY JUNE 8, 2019 11am-4pm

Explore 26 venues offering a behind-the-scenes look into Surrey's rich heritage, art, culture and architecture.

CLOVERDALE | NEWTON

SOUTH SURREY | WHALLEY

Fun activities for all ages
Win prizes with our Photo Contest
Guided tours, entertainment & more!

#SurreyDoorsOpen
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- Surrey Operations Centre

SOUTH SURREY

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- Surrey Parks & Sunnyside Acres Heritage Society*

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- Central City Brewers & Distillers
- Chuck Bailey Recreation Centre
- City Centre Library
- Di Reggae Café
- Douglas College Training Group*
- Sprite Multimedia Systems Ltd.
- Surrey Biofuel Facility
- Surrey Nature Centre
- Viva Care Medical Group

*NEW venues for 2019!



The New Westminister Hyack International Parade

Saturday, May 25th.

Operators assigned to the assembly area and parade officials will start communications at 08:00 and those assigned to points along the parade route will start a little later. The event starts at 10:30 with the Vancouver Police Motorcycle Drill Team and the parade follows. We are usually all done by around 13:00.

I am in need of about 25 operators. Assignments will include such things as assembly area, judging, shuttle buses, police, First Aid, with various Hyack and parade officials, P.A. announcer, dispersal etc.

The parade committee also counts on us for communication at many of the intersections along the parade route. Radio operators assigned to these points may wish to have family members with them to enjoy the parade.

Please let me know whether you will be able to help. May 26 seems like a long ways off, but is just over 4 weeks away! I know how much the Hyack Association and the City of New Westminister appreciate our services.

HELP PLEASE! - FORWARD THIS MESSAGE TO ANYONE YOU THINK MIGHT POSSIBLY BE INTERESTED IN JOINING US. ANNOUNCEMENTS ON NETS, CLUB MEETINGS, NEWSLETTERS, WEBSITES ETC. WOULD BE GREATLY APPRECIATED!

As always, new hams are very welcome. No experience is necessary, we can certainly buddy up any brand new hams with an experienced operator. All that is required is a 2 metre handheld (and hopefully a spare battery!)

I will of course supply further details as the event draws closer. Thanks in advance for your help,

~ Ken Clarke VE7BC
ve7bc@arrl.net

telephone: 604-816-5775 (cell, texting is good)

Video of FT4 talk by Joe Taylor K1JT

On March 15, Joe Taylor K1JT gave a talk on the new digital mode FT4 to the Fair Lawn Amateur Radio Club.

Soon after the "FT8 Roundup" held on December 1-2, 2018, we started serious work on a faster, more contest-friendly digital mode that can compete with RTTY-contesting QSO rates while preserving many of the benefits of FT8. The result is FT4, a new digital mode specifically designed for radio contesting.

Over the past month a small group of volunteers have been conducting on-the-air tests of FT4. The early tests were very successful and helped us to make a number of important design decisions. We believe FT4 has considerable promise for its intended purpose.

We'll soon be ready for testing by a larger group. If you might be interested in participating and offering your considered feedback, please read the descriptive document "The FT4 Protocol for Digital Contesting"
http://physics.princeton.edu/pulsar/k1jt/FT4_Protocol.pdf

We plan to post downloadable installation packages for WSJT-X 2.1.0-rc5 on April 29. The document linked above includes:

- Instructions for installing WSJT-X 2.1.0-rc5 and FT4 configuration;
- Operating instructions for FT4;
- Basic description of the FT4 protocol, modulation, and waveform;
- Detailed sensitivity measurements for FT4 under a wide variety of simulated propagation conditions;
- Schedule for upcoming test sessions.

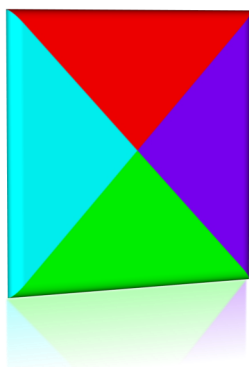
Please consider helping us to make FT4 a successful mode for digital contesting.

The video is at: <https://youtu.be/2Pd7zB40xdY>

With best wishes and 73,

~ Joe K1JT, Steve K9AN, and Bill G4WJS"

May 2019



Foundations Of Amateur Radio

VK6FLAB Onno Benschop

Episode 182—When does knowing more make it harder?



*For the audio
podcast
Foundations of
Amateur Radio
visit the website:
<http://podcasts.itmaze.com.au/>*

The other day one of my non amateur friends asked for some help. He wants to set up a receiver for his bush fire brigade that's available via the internet so his community can listen to the communication channels when there are fires around, or when a volunteer is out of radio range but still wants to hear what's going on.

His question was about hooking up an antenna.

We started to discuss what he already had and it turns out that he has enough coaxial cable in either 50 Ohm RG58 or alternatively 75 Ohm low loss quad shielded satellite TV coax.

He's not an amateur, won't be broadcasting and just needs it to work without spending too much money.

We then started talking about antennas and he had a tuned whip and a generic scanner antenna. Turns out that the tuned whip was for 78 MHz and he needs to listen to 164 MHz, so I suggested the scanner antenna, so called broadband, but no actual specifications.

Then we talked about how it was going to be mounted to his metal roof. Tek screws to the iron, a CB mount with solder pads. That started a conversation about waterproofing and coax rot, termination and then the ground plane.

I could get my antenna analyser out, drive to his place an hour or so away, help him install and test it and then decide that we need other options. We might still decide

to do that, but it will be driven by what happens at his installation.

If you're a licensed amateur with a little experience, this story will leave you with a whole lot of but, but, but.

If you're not, then you'd come away with, that's pretty reasonable, let's go.

What I find fascinating is the gap between those two.

On the one hand you've got knowledge that says this isn't ideal, who in their right mind would hook up a random antenna without the proper ground plane with an unknown feed point impedance to a 75 Ohm coax, using solder pads on the top of a roof. There's more of course, but those are the big ticket items.

On the other hand you have an antenna, coax, connectors that fit and a high likelihood of noise coming from your radio.

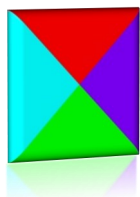
I'm not going to pretend that the choices we made over the phone are the final ones, or that it will even work as described, but we discussed that and the selection of parts gives us the highest chance of success, and rather than give the right answer we went with the closest we could get without spending a cent.

The gap between knowing and not knowing can be perilous, but it can also be used as a map to navigate from one to the other.

Is this going to work? Who knows, too many variables to be certain, too many unknowns.

Sometimes ignorance is bliss and sometimes knowledge is a burden. Finding the balance is a lifetime of learning.

~ I'm Onno VK6FLAB



Episode 192: How effective is your station?

We tend to spend most of our energy looking at antennas and power to evaluate how well our station works. Based on a better antenna or more power, you're likely to make more contacts is the general gist of the process.

Being a QRP operator, power rarely comes into the conversation, 5 Watts is what you get, leaving antennas as the prime method of discovering how effective we can be.

Recently I received an email from Layne AE1N, pointing me at an article he wrote on the Nashua Area Radio Society website titled: It's all about the decibels - factors in enhancing station effectiveness.

The article, goes into great detail in looking at an alternative way of measuring how well you're doing and builds on the December 2013 QST article - How Much Punch Can You Get from Different Modes?

In our hobby we measure using a thing called the decibel. I've spoken about it at great length previously. The way to use it is to compare something against something else. Using the metric used in the QST article we take as a starting point a modern transceiver, using 100 Watts, CW into a half-wave dipole at 30m.

Everything we're discussing from here on in, is related to that starting point, the

zero point. I should also make clear that we're talking about the ability of the receiver to decode your message, not the strength of the signal.

If you were to use the same radio and instead of using CW, used AM, you'd have a station that was 27 dB worse off. That is, your signal would effectively become harder to hear by 27 decibel. On the other hand, you if were to replace the half-wave dipole with a 4 element Yagi, your station would be just under 7 dB better off, that is, it would be easier to hear you by 7 dB.

Of course you can combine AM and the Yagi, adding the two measurements together, coming out at minus 20 dB, which means that compared to a 100 Watt transmission on CW into a half-wave dipole, the same 100 Watt transmission on AM into a 4 element Yagi would still be harder to hear by 20 dB.

If you go from CW to SSB, you'd be 17 dB worse off, or SSB is 10 dB better than AM.

Note that when I say better and worse, it's about how much your signal can be decoded at the other end, using the same receiver, antenna, etc.

The whole article includes comparisons between CW and FM, CW and RTTY and so-on. RTTY is only 4 dB worse than CW, but most transceiver manufacturers recommend that you reduce power to a quarter power, that is, 25 Watt instead

To listen to the podcast, visit the website: <http://podcasts.itmaze.com.au/foundations/> and scroll to the bottom for the latest episode. You can also use your podcast tool of choice and search for my callsign, VK6FLAB.

All podcast transcripts are collated and edited in an annual volume which you can find by searching for my callsign on your local Amazon store, or visit my author page: <http://amazon.com/author/owh>.

Foundations of Amateur Radio Volume 7 is out now - with chapters on digital modes, coax connector loss, waterfalls, station performance and more.

Feel free to get in touch directly via email: onno@itmaze.com.au, or follow on twitter: @vk6flab (<http://twitter.com/vk6flab/>)

If you'd like to join a weekly net for new and returning amateurs, check out the details at <http://ftroop.vk6.net>, the net runs every week on Saturday, from 00:00 to 01:00 UTC on Echolink, IRLP, AllStar Link and 2m FM via various repeaters.

ITmaze -ABN: 56 178 057 063

phone: 04 1219 8888
onno@itmaze.com.au

May 2019



...if you were to use 5 Watts FT8 into a quarter-wave dipole, using 100% of the 5 Watts, you'll actually be 12 dB better off than the same station using 100 Watts CW.

of 100 Watt when using RTTY or Digital modes, so you end up losing 14 dB for that, making RTTY slightly worse than SSB if you follow the manufacturer instructions to reduce power.

This isn't all doom and gloom however. Even though CW is very effective, we can improve things in other ways. For example, using PSK31 gives you a 7 dB head start, switching from CW to JT65 or FT8 gives you 25 dB. Even if you take into account the reduction from the loss of full power, 14 dB, you still end up in front by 11 decibel, which is more than you can get from upping power from 100 Watt to 400 Watt which only gets you 6 dB.

Adding an 11 element Yagi gives you a similar improvement as changing from CW to FT8, just over 11 dB, and using 1500 Watts is only slightly better at 12 dB.

The point I'm making is that you can use this idea to figure out how to get your signal heard. More power or a bigger antenna is only part of the conversation, picking the correct mode is just as important.

Of course, the 11 dB gain you get from moving from CW to FT8, even when reducing power, is one of the main reasons that it's so popular, much easier to change mode than to build a new fancy antenna.

One more thing, what of the 5 Watts vs. 100 Watts we started with, 13 dB. That's significant, but if you were to use 5 Watts FT8 into a quarter-wave dipole, using 100% of the 5 Watts, you'll actually be 12 dB better off than the same station using 100 Watts CW.

Check out Layne's article for a reference to QST and a whole lot more. It's a very useful way of looking at how your station can be very effective, even if you're QRP.

~ So, for now, I'm Onno AX6FLAB

Hams try to re-carve the amateur radio spectrum in fight over open or encoded broadcasts
The technology website The Register reports: Radio enthusiasts argue signals must travel in the open, for the [sake of national security](#).



SARC Membership Fees Are Due

Please note that our new fiscal year is rapidly approaching and your annual membership is due. Payment may be made at any monthly meeting, at the Saturday coffee meeting, by mail or via PayPal. Details on payment options are available at our website at:

<http://ve7sar.net/join.html>

Only members in good standing may vote at the June 12th AGM. This requires that annual dues for 2019-2020 be paid prior to or at the start of this meeting.



No-Ham Recipes

Chocolate Zucchini Cake

If you have a garden and even one zucchini plant, and the summer weather is good, you will probably have more zucchini than you know what to do with. Here is one way to rescue all that zucchini! And for chocolate lovers, you can add chocolate chips to your heart's content when making this cake.

- 1/2 cup (125 ml) margarine
- 1/2 cup (125 ml) oil
- 1 3/4 cup (445 ml) granulated sugar
- 2 eggs
- 1 teaspoon (5 ml) vanilla extract
- 1/2 cup (125 ml) sour milk
- 2 1/2 cups (625 ml) all-purpose flour
- 4 tablespoons (60 ml) cocoa powder
- 1/2 teaspoon (2.5 ml) baking powder
- 1 teaspoon (5 ml) baking soda
- 1/2 teaspoon (2.5 ml) ground cloves
- 1/2 teaspoon (2.5 ml) ground cinnamon
- 2 cups (500 ml) grated zucchini
- Chocolate chips

**Preheat your oven to 325F
(160C or a slow oven)**

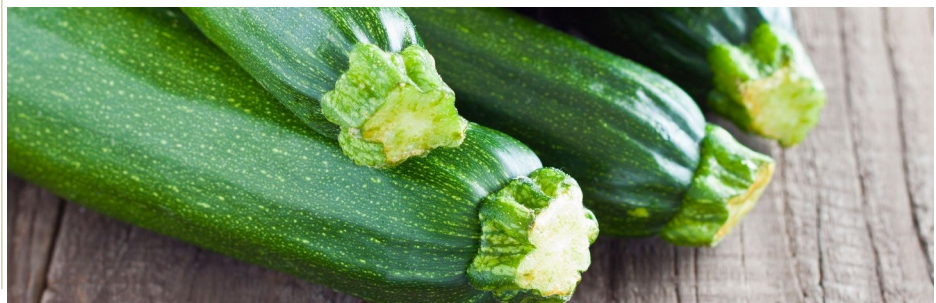
Cream oil, margarine and sugar together. Add eggs, vanilla extract and sour milk. Combine dry ingredients and add to the mixture; beat well, then add zucchini.

Mix in the chocolate chips—as many as you like.

Pour the batter into a greased and floured pan: either a 9 x 13 inch (23 x 33 cm) pan, two loaf pans or smaller square pans.

Bake for 45-55 minutes or until done.

~ Paulette Schouten VE7VPE
(or VA7PMS on bad days)

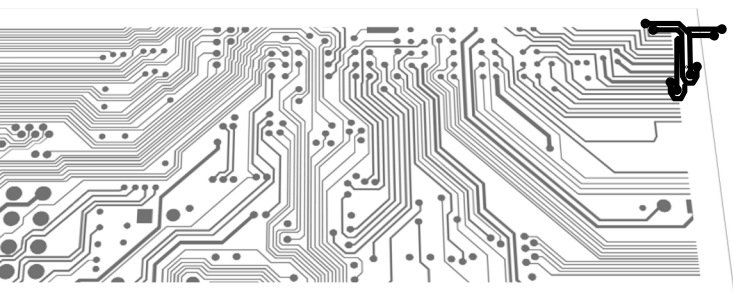


Do you use digital modes? How did the qwerty keyboard become so popular? (50 Things That Made the Modern Economy)

It isn't easy to type "QWERTY" on a qwerty keyboard. My left-hand little finger holds the shift key, then the other fingers of my left hand clumsily crab sideways across the upper row. Q-W-E-R-T-Y. There's a lesson here: it matters where the keys sit on your keyboard. There are good arrangements and bad ones. Many people think that qwerty is a bad one - in fact, that it was deliberately designed to be slow and awkward.

Could that be true? And why do economists, of all people, argue about this? It turns out that the stakes are higher than they might first appear. See: <https://www.bbc.com/news/business-47460499>

May 2019



TECH TOPICS

Daniel Romila VE7LCC

Analog CW keyer with 4 BJT

I always enjoyed building CW keyers. I started with relays and ended up with microcontrollers. But one of the most rewarding CW keyers was made with bipolar transistors. When building a CW keyer I want to fulfill the following conditions:

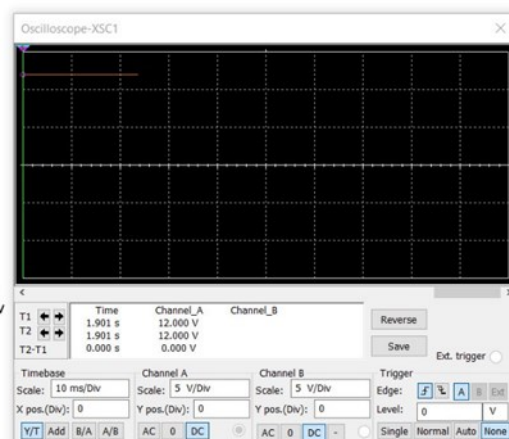
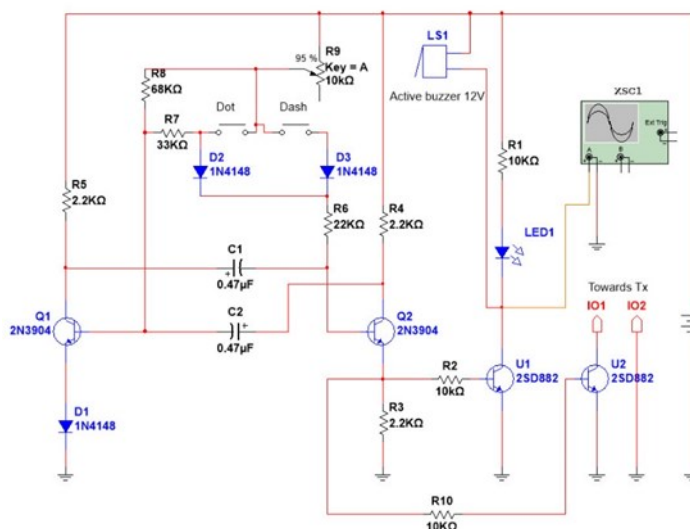
- The ratio between dots and dashes to be 1:3 at all speeds.
- When I push the paddle, the transmission to start immediately.
- If I release the paddle before the dot or dash is finished, the CW keyer to continue that transmission until the end of the dot or dash, correcting my hand timing mistake.
- Not to be influenced by contact resistances in the paddle.

Sometime in 70's I found a schematic with transistors that fulfills the above conditions. I saw it on the Internet in so many places that I cannot pinpoint the author. But, since it is not my design, not completely my design - I should mention a source:

http://www.seekic.com/circuit_diagram/Control_Circuit/Simple_Electronic_Keyer.html

The schematics, in standby, drawn and practically tested by myself are shown below.

The CW keyer part of the schematics is done with the Q1 and Q2 transistors, which can be any NPN type, I used 2N3904. All switching diodes are 1N4148,, which are silicium based diodes. The potentiometer for adjusting the speed is 10K Ohm and it is used as a 2 pin variable resistor. The paddle is surrounded by resistors with value greater than 10Kohm, so even some ohm contact resistance is acceptable.

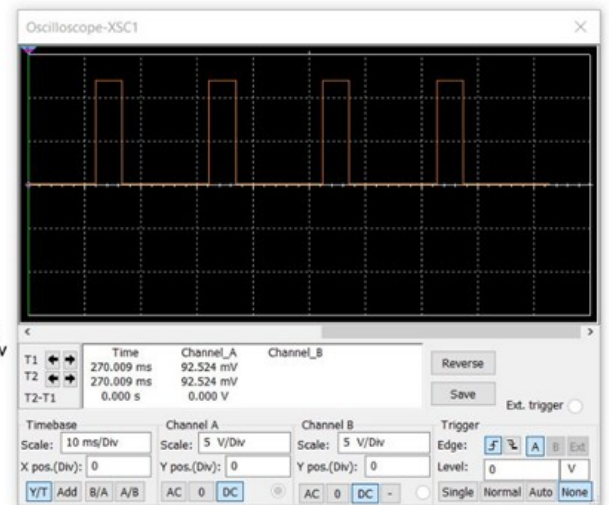
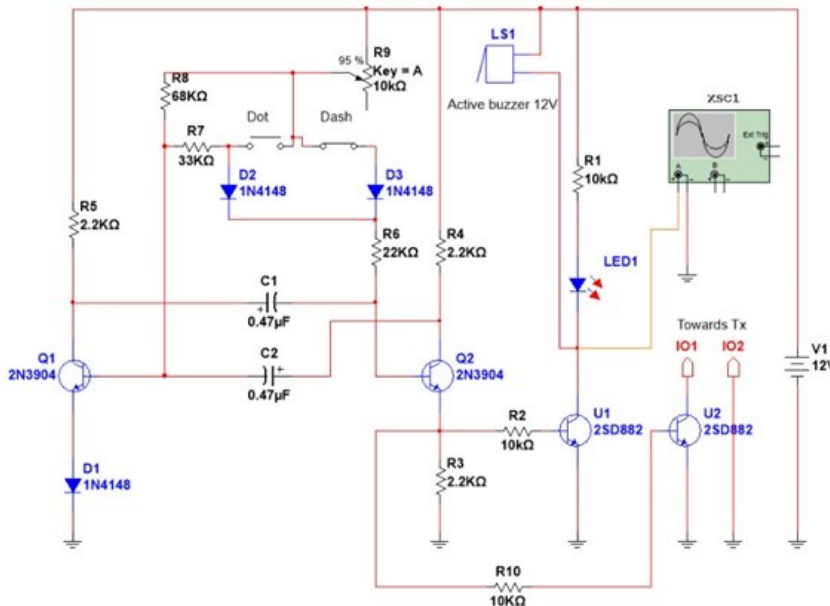


The transistors U1 and U2 are used as switching transistors.

- U1 activates a Chinese cheap red LED which can light at under 1 mA. It also activates an active buzzer (that kind of buzzer that generates by itself a tone when power supplied). It has to be a 12 V rated buzzer - otherwise a resistor must be put in series with the buzzer, not to burn it.

- U2 activates an external transmitter for Morse (CW) communication.
- I used 2SD822 for U1 and U2. One can also use BD135, BD137, BD 139 and so on. Using 2N3055 transistors would be an overkill, but possible, too.

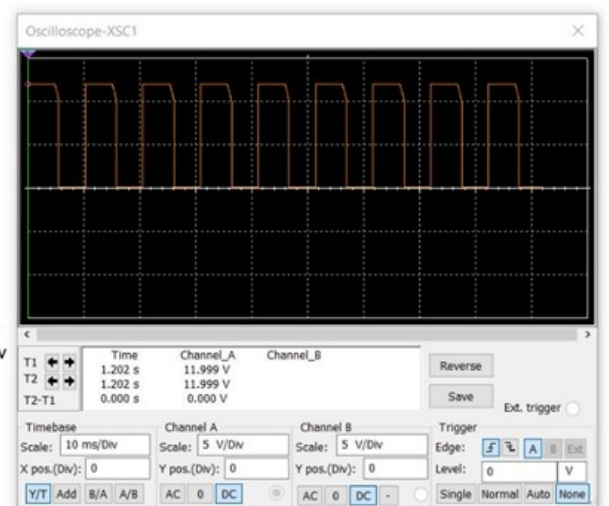
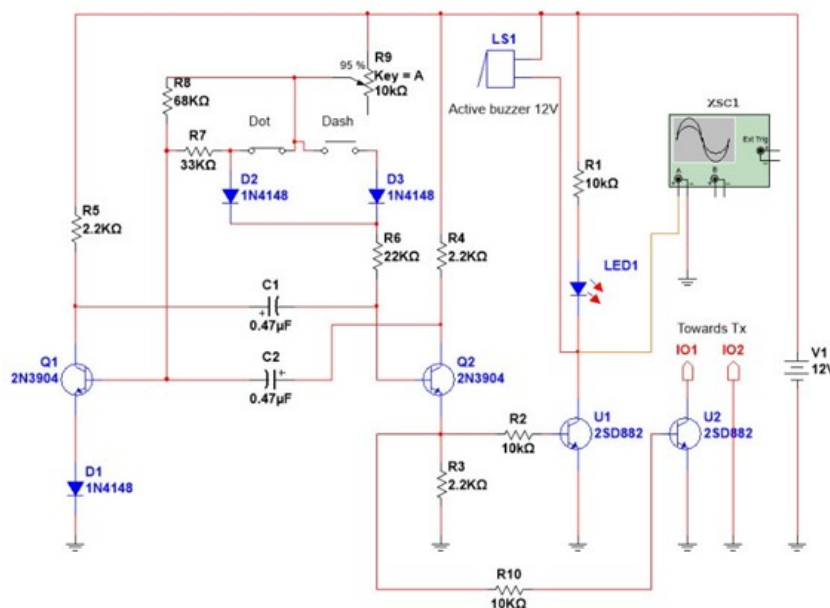
I simulated the schematics for dashes:



Please note that the oscilloscope is connected in the collector of a final switching transistor, U1. This transistor is saturated and activated when its collector is close to zero volts. So this is what you see in the beginning of the display of the oscilloscope, the start of

a dash. We can call it negative logic, because the active signal is at zero, not at a positive value. The red LED lights up in unison with the dash that was dictated by the paddle in the position "Dash".

For dots:



May 2019

The red LED blinks. The output, in negative logic, shows dots, with equal active and non-active periods of time. I could not catch the oscilloscope exactly at the point when a dot started, because I had to start the simulation, wait for the display of the oscilloscope to be full and also start the screen capture. You got the idea of the perfect functioning, shown by the simulation.

The above simulations done on the computer were also verified on the breadboard. I did not assemble it into a permanent case. Probably I will do it, soon. I have made several versions of the above CW keyer in the last 40 years.

Those CW keyers are kind of exhibit objects, to show to others. It is true I can only have a limited number of CW keyers at home at a certain moment.

If you want to have a CW keyer that is simple, reliable, this is the schematic to implement.

~ 73, Daniel VE7LCG

What Is A Keyer?

A keyer (combined with a "paddle") makes sending Morse code easier than the traditional "straight key" which most people would imagine is used. Instead of having to precisely time the dits, dahs and the spaces in between a paddle/keyer combination does a lot of the timing for you, using a speed setting of your choice. Pushing the paddle one way sends a string of repeating dits and pushing the paddle the other way sends a string of dahs.

An "iambic" keyer uses two paddles side by side and therefore lets you press both at once ("squeezing" them): in this mode dits and dahs will alternate. The keyer defaults to "iambic A" mode which sends alternating dits and dahs while both keys are pressed. With the toggle switch you can change to "iambic B" mode which adds one extra dit or dah to the end of the sequence.



Social Reminder

The Surrey weekly social gathering is on Saturday at the Kalmar Restaurant at 80th and King George Boulevard between 8 and 10:00 am. You don't have to be a SARC member to participate. Bring your significant other, bring your family, see old friends and have fun.



Notice Of
ANNUAL GENERAL MEETING

Of The
**SURREY AMATEUR RADIO
COMMUNICATIONS SOCIETY**

June 12, 2019 at 7PM
Emergency Management BC Offices
14292 Green Timbers Way, Surrey, BC

Agenda

1. Welcome, call to order and confirmation of quorum
2. Approval of the agenda
3. Approval of 2018 AGM Minutes
4. Presentation and approval of annual financial statements
5. Announcements
6. Committee Reports
7. New and other business (Bylaw amendment re: Fiscal year)
8. Election of Directors
9. Adjournment

Call For Nominations:

Members elect up to 4 Directors annually for a two year term. Directors, in caucus, appoint the Officers (President, Vice-President, Secretary and Treasurer).

Directors whose 2-year terms expire are: John Brodie, John Schouten, Robert Fishwick, and Scott Hawrelak. Nominations are currently being sought and will also be taken from the floor.

Only members in good standing may vote at the AGM
This requires that annual dues for 2019-2020 be paid prior to or at this meeting

May 2019



Daniel Romila VE7LCG

Lighting a station ON THE AIR sign

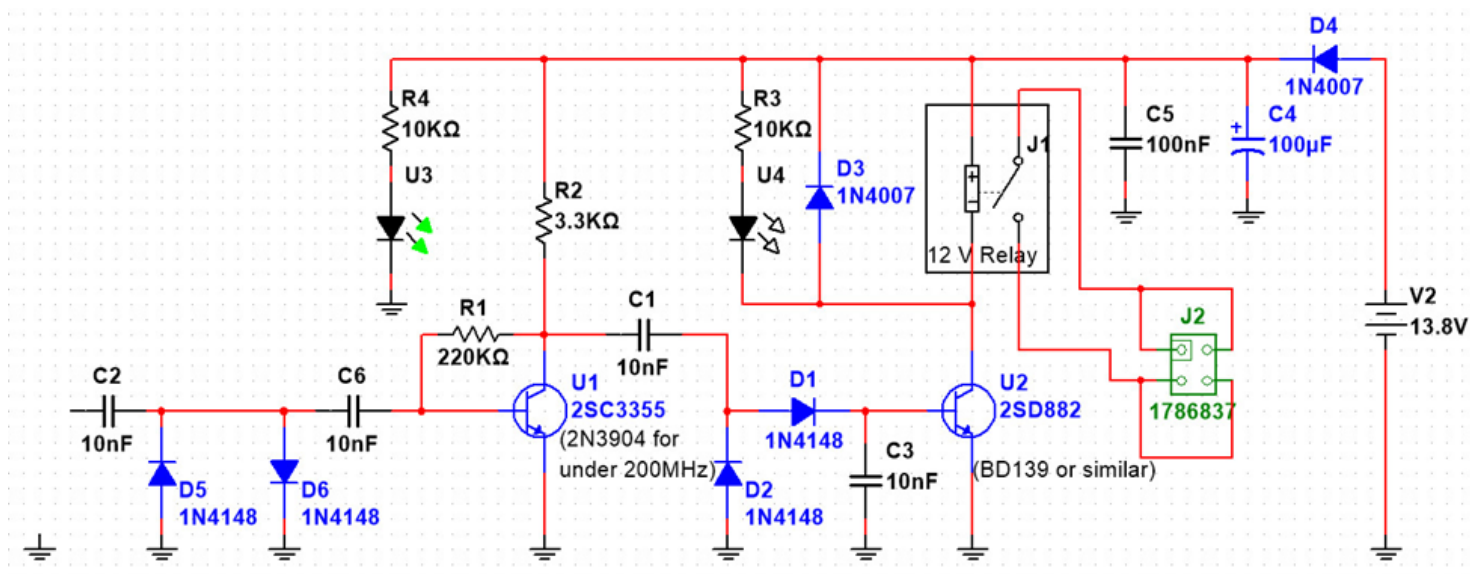
on November 21st, 2018 John, the editor of The Communicator wrote me an email in which he stated a problem:

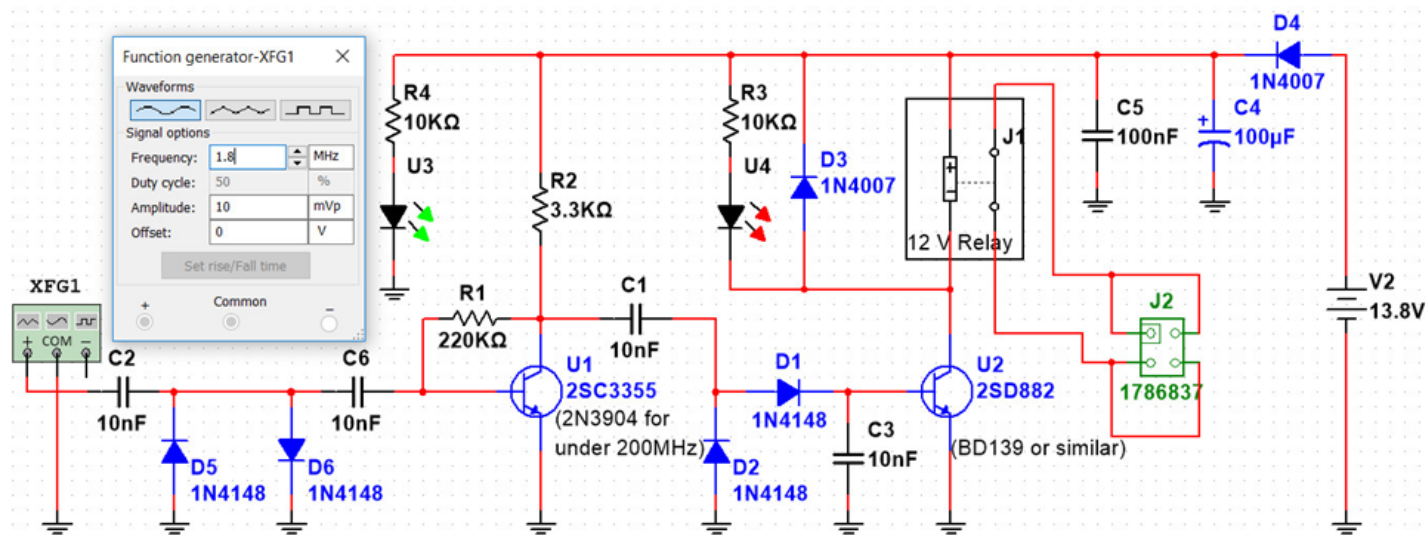
"I have a question for you from a reader. He is wondering if there is a method to create an 'On The Air' 12 volt LED sign that is triggered by an HF transceiver without a direct connection to the unit. I was thinking there may be enough stray RF in the shack to rectify and trigger a sensitive op amp, which could turn on the LEDs."

John's idea that "there may be enough stray RF in my shack" made me panic; I do hope there is much more stray RF in my shack from my Internet modem, my cellphone and various home equipment than the stray RF from my

transceivers. But, anyhow, the stray RF was the idea, and I went on to experiment with the stray RF on the feedline, which is what John published in the December 2018 version of The Communicator, on page 33 (see goo.gl/n3WNwe).

So, my idea - generated from John's idea - was to make a wire coil around the transceiver's coax cable that goes towards the antenna, amplify it a little, rectify it and activate a relay with which to switch ON/OFF the On the Air Sign. The switching ON/OFF can be done by a direct power connection through the relay, or using the relay switch for a remote control kind of system. Anyhow, I was interested just in making the sensor part.





The signal from the coil around the coax enters C2. The other part of the coil must be connected at ground. I used such big capacitors in order to be able to use this project at lower frequencies too. My target in the above schematics was to have a solid ON for the relay with 10 mV input at 1.8 MHz. This was easy to obtain (*diagram above*).

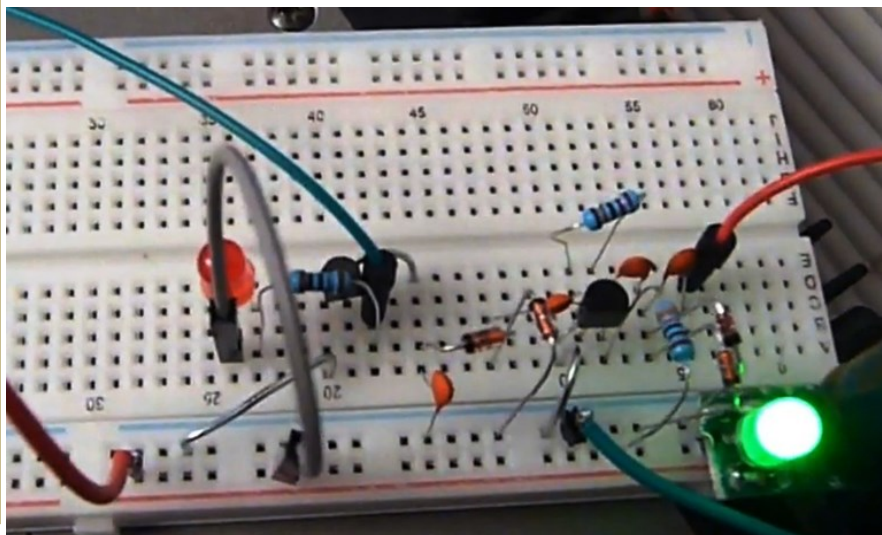
With 10 mV RF signal the switch of the relay is ON and the red LED U4 light ON. Please see the differences comparing the previous schematics, which is in fact also a simulation. There is no difference between using a 2N3904 NPN transistor or a 2SC3355 in the HF. (John stated such device was intended for HF; but please read on, because I experimented on 144 MHz, too, and I posted a YouTube video about it.

The 2SC3355 transistor works up to 7 GHz, with a noise figure of 1.1 dB at 1 GHz. It is more expensive than 2N3904: 100 pieces are C\$1.76, shipping and taxes included. That means 1.76 cents for one.

I went on to breadboard the design to verify its operation. I especially paid attention to:

- Saturation of the U2 final transistor. I wanted to have at least 12 Volt from the supplied 13.8 Volt on the relay. For test purposes a 2N3904 is good enough instead of the 2SD882.
- See if it works with Silicon 1N4148 and with Germanium 1N60 diodes. It works, and with the Germanium diodes it is more sensitive. The project simply has enough amplification to work with whatever diodes and transistors one should put there.

The breadboard looks like this:

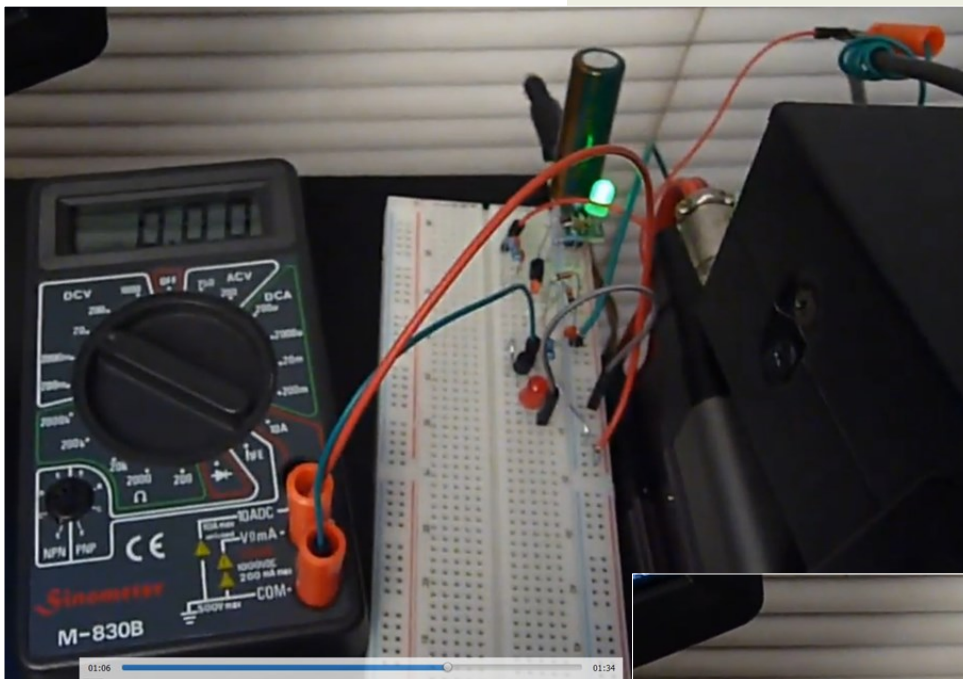
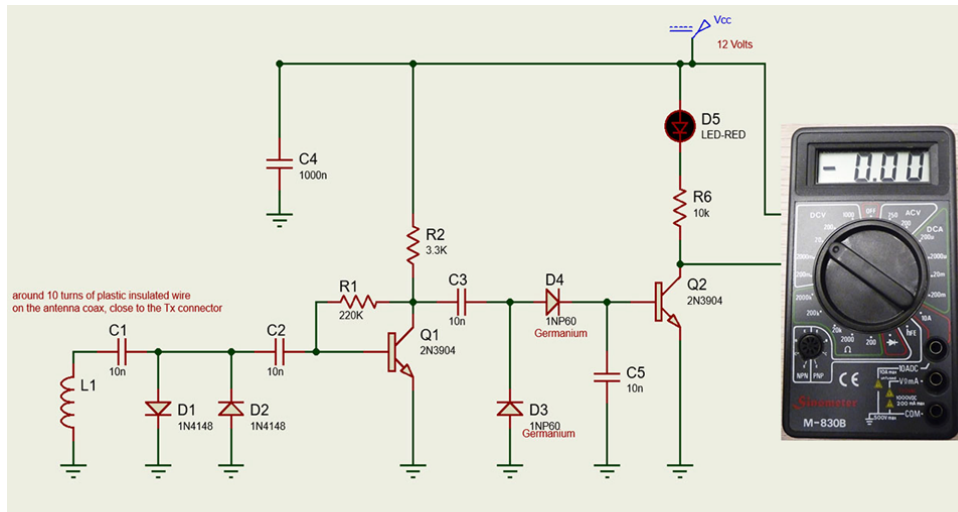


May 2019

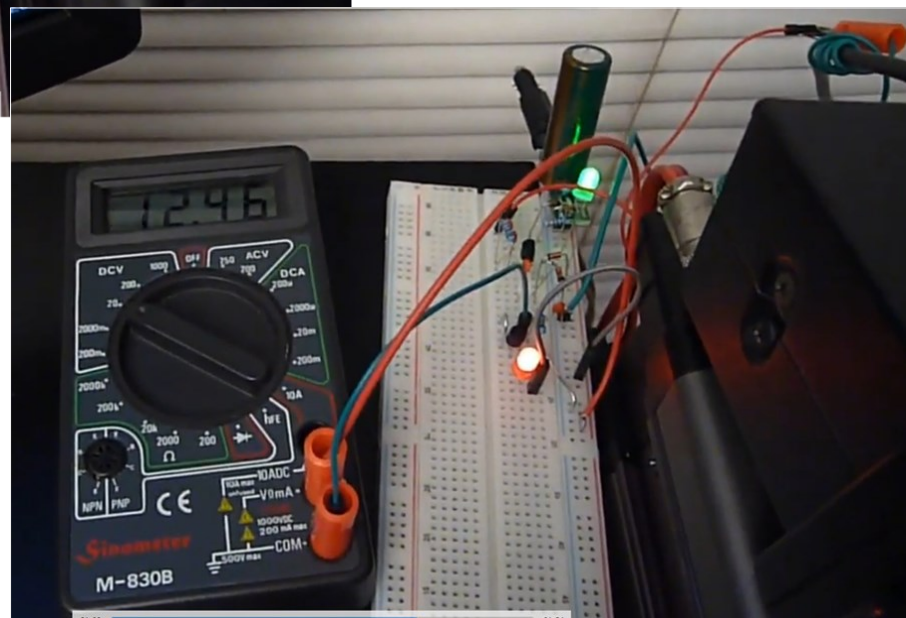
The working schematic for my tests

Below: I started with a CB transceiver, which has some 3 Watts power in the 27 MHz band.

On reception:



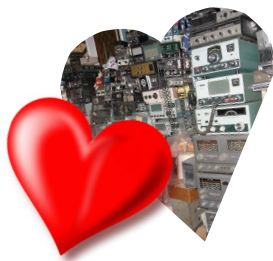
Below: And when I push the Tx button the red LED is ON and I have 12.46 Volts where the relay will be:



These pictures are extracted from my YouTube video where you can see everything in action in high definition, including the same test for 144 MHz: <https://www.youtube.com/watch?v=79X3YyLZ53g>

So, the sensor part works. I did not continue to actually make a light sign on the door. The last thing I want is for the neighbors to find out I have transceivers.

~ Daniel VE7LCG



Hardware

Les Tocko VA7OM and John Brodie VA7XB

The Triplexer Project

The basic principles of triplexers, diplexers and bandpass filters were explained in an earlier Communicator article. Here we describe the construction and tune-up of our recently completed 10-15-20 m triplexer, 40-80 m diplexer and 10-15-20-40-80 m band pass filters. Band pass filters must always be used in series with the triplexer and diplexer to achieve acceptable rejection of unwanted frequencies.

Recall that these devices, used in combination, will allow 2 transmitters (in the case of 40 and 80 m), and 3 transmitters (in the case of 10-15-20 m) to be used simultaneously on our multi-band antennas without mutual interference to corresponding receivers. This requires remarkable degree of isolation, when it is considered that a transmitter might be putting out 1 kW or more into a device that is connected to the input of a receiver. There is no room for error or smoke will be the result!

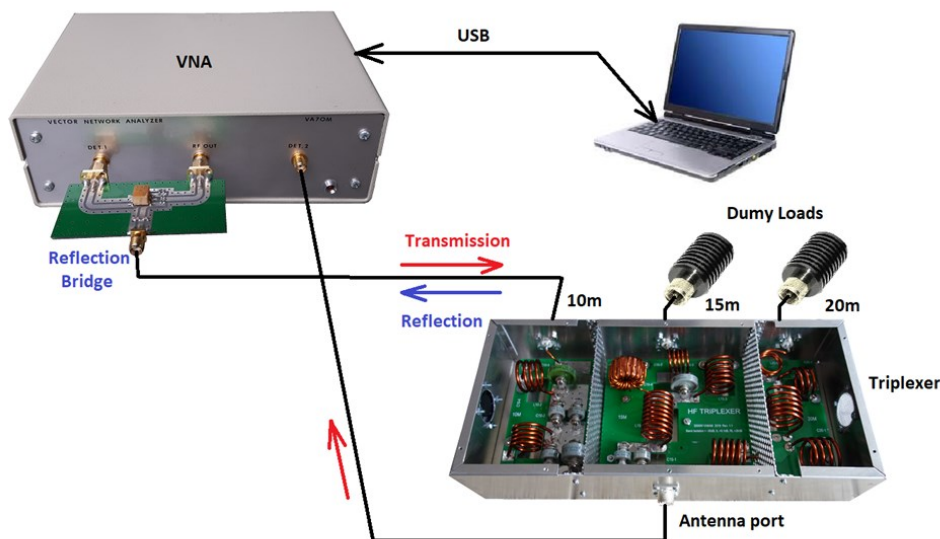
For starters, we must acknowledge the assistance provided by Pavel VA6AM, who makes similar units for sale, but nevertheless was willing to share his expertise, his schematics and sourcing of parts. With his help we were successful in achieving insertion loss, attenuation of unwanted frequencies and VSWR on our units for all 5 bands comparable with Pavel's advertised units. A big "thank you" to Pavel who generously shared his know-how in the great tradition of amateur radio.

These are high power units so parts selection was critical. All capacitors are high voltage RF "doorknob" types, which are hard to find and quite expensive. We

purchased the capacitors from Eastern Europe, made available on the military surplus market after the collapse of the Soviet Union. The coils are constructed from heavy gauge enameled copper wire, which also could not be found locally and had to be obtained from Internet sources. Other components such as ceramic standoff insulators, coax fittings and other hardware came from our junk boxes.

The picture below shows the setup used for tuning the 10 m leg of the triplexer. During testing, unused ports were terminated with 50 ohm dummy loads, using the VNA in dual mode (i.e. transmission and reflection at the same time). This allowed us to see the transmission (gain/loss) and reflection (VSWR) on the same plot.

The same setup was used to tune up the diplexer and all band pass filters.

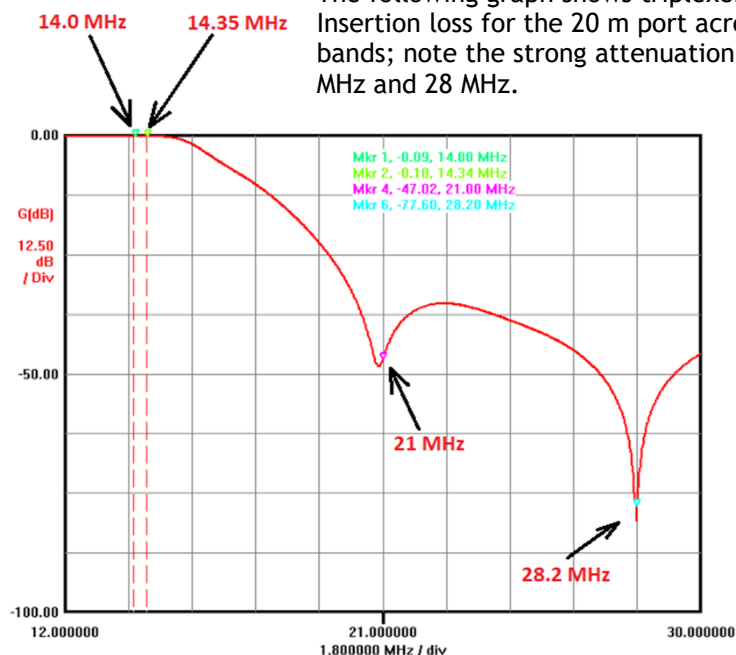


May 2019

The completed 10-15-20 triplexer is shown below on printed circuit boards supplied by Pavel VA6AM. When the cover was placed on the triplexer, due to inductive effects the tuning changed and had to be started over again. This problem was experienced with all of the units, to some degree.



The following graph shows triplexer Insertion loss for the 20 m port across all 3 bands; note the strong attenuation at 21 MHz and 28 MHz.



The table on the next page shows the final test results for the triplexer (when looking into transceiver ports).

The table below shows the VSWR when looking into antenna port.

The completed 40-80 diplexer is shown. Tuning of these bands suffers significantly when the cover is placed on the unit. Note the fan mounted at one end of the box and the screened vent hole at the other.

The completed 20m bandpass filter is shown on the next page. Capacitors are mounted below the pc boards in parallel with the grounded coils, or on top of the boards when mounted in series with the coils.

John VA7XB and Les VA7OM shared the work. Les first mounted the female coax connectors, fans and vents in the enclosures, then John laid out and installed the capacitors and shielding. Finally, Les wound and added the coils and undertook the tuning by trial-and-error using the VNA. In some cases, the values of C and L had to be varied from Pavel's schematics to attain the desired specifications or to accommodate the parts on hand. Careful tuning was undone in many cases when the inductances were effectively changed by fastening the cover to the previously open enclosure.

Conclusions

It is possible to successfully construct these high power units, but the projects are not recommended for the faint-of-heart or inexperienced builders. The use of a VNA or equivalent is required in order to achieve satisfactory results. Also be aware of the difficulty of purchasing the high voltage components and the ease in which the capacitors can be broken during excessive tightening of fasteners (so order a few extras). Component placement is fairly critical and differences from Pavel's layouts will likely result in different performance.

In building these units ourselves, we saved about 40% of the purchase price but, with hindsight, can confidently state that the purchase cost of fully-completed units is easily justified, as there will be many days of frustration and work, even for the experienced builder.

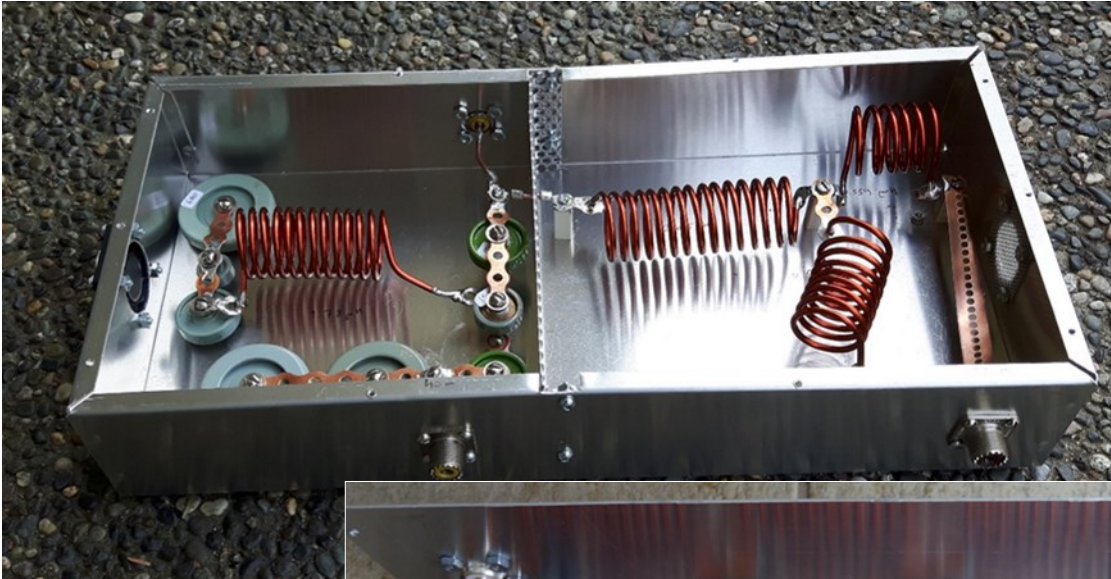
~ Les Tocko VA7OM and John Brodie VA7XB

Triplexer	Frequency [MHz]	Insertion Loss [dB]	VSWR	/Zs/ [ohms]
10 m Leg	14.0	-48.4		
	14.3	-69.4		
	21.0	-41.3		
	21.5	-31.3		
	28.0	-0.089	1.065	52.52
	28.8	-0.078	1.083	50.36
15 m Leg	14.0	-30.22		
	14.3	-30.82		
	21.0	-0.084	1.058	52.65
	21.5	-0.081	1.020	50.02
	28.0	-31.47		
	28.8	-35.35		
20 m Leg	14.0	-0.081	1.076	49.10
	14.3	-0.092	1.092	47.79
	21.0	-46.01		
	21.5	-38.93		
	28.0	-63.17		
	28.8	-54.56		

the final test results for the triplexer (when looking into transceiver ports).

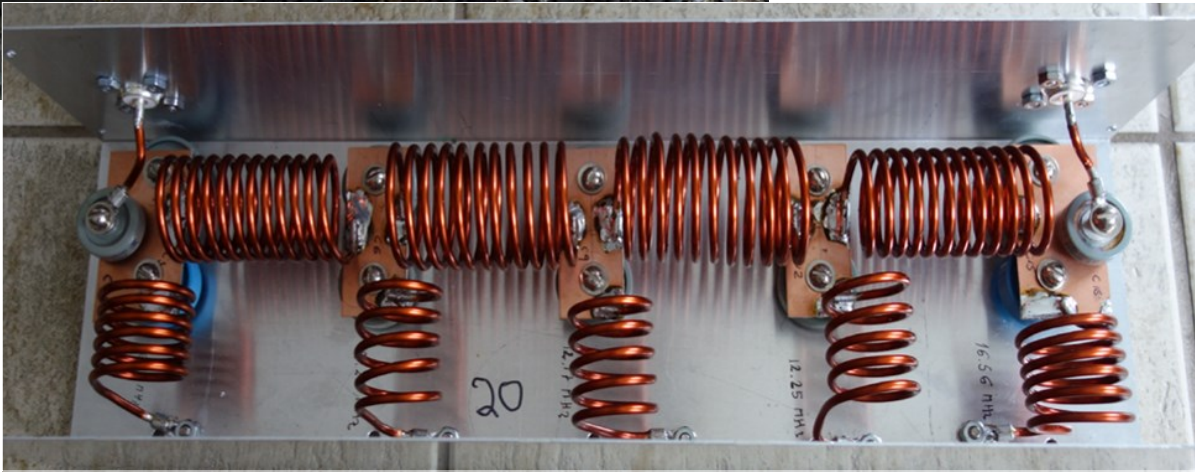
The table below shows the VSWR when looking into antenna port.

Antenna Port VSWR	
14.0	1.042
14.3	1.089
21.0	1.051
21.5	1.07
28.0	1.032
28.8	1.069

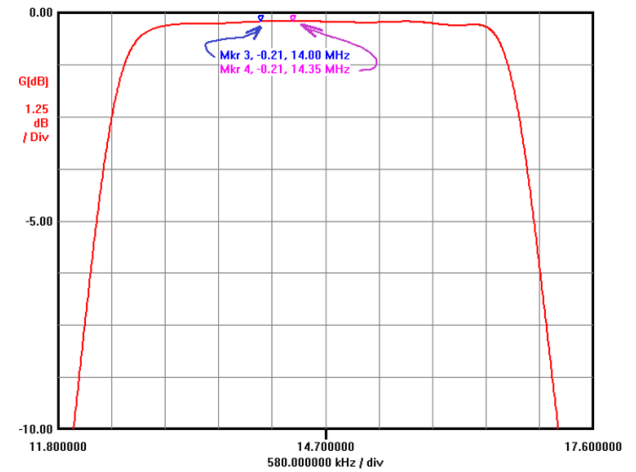
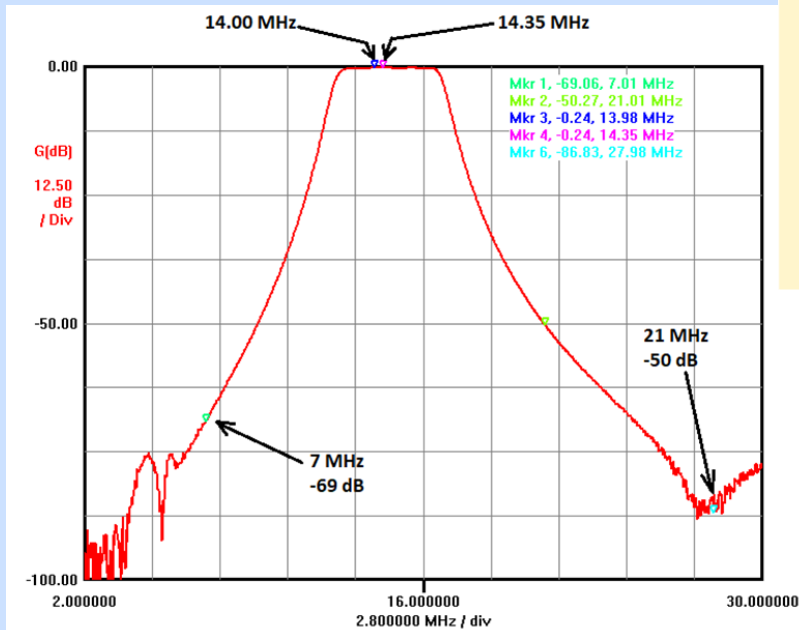


The completed 40-80 diplexer.

20m bandpass filter

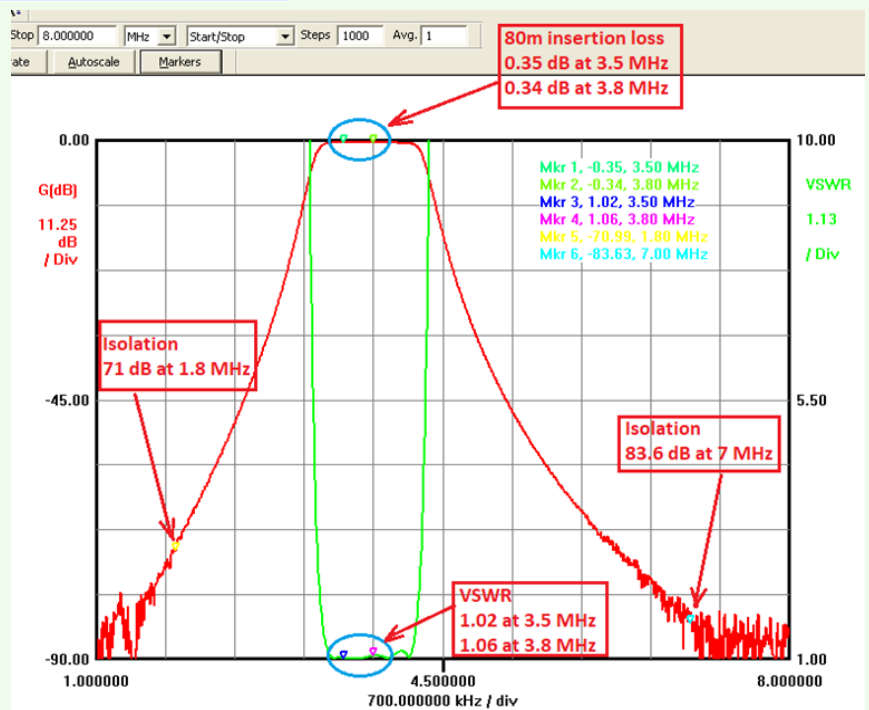


May 2019



Insertion Loss for the 20m bandpass filter

Insertion loss and VSWR for the 80m band pass filter



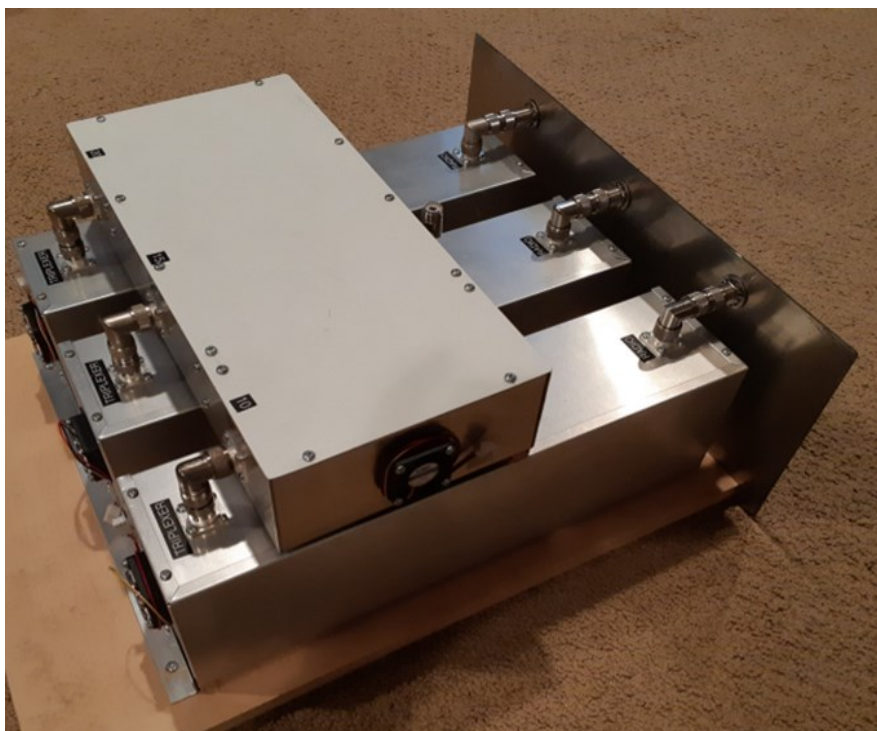


The completed 10-15-20 m bandpass filters were mounted on a board and connected to the triplexer with right-angle UHF coax connectors.



Unused bandpass filter ports are terminated with 50 ohm dummy loads made from PL-259 connectors and 1 watt resistors.

All the units were installed on shelves in a standard 19-inch rack, shown at left. SPDT switches allow the antenna to be connected directly to the radio, or to the triplexer or diplexer when needed for multi-transmitter operation. Vent holes and 12 volt fans were installed in all of the units. However, when operating at 1 kw, they probably will not be needed.



May 2019

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Scott Hawrelak VE7HA

Getting The Advanced Qualification

I have been licensed since 2004. I have been almost exclusively on 2m doing public service assignments including the Hyack Parade, the Christmas Santa Claus parade and the Rotary Bikeathon. Even though I passed with honours, I have done next to no HF.

When I came back from Oregon in August 2017 after going down for the total solar eclipse, I stopped in Portland and went to HRO and came out with a brand new ICOM 7300 saving about \$500 over buying it in Canada.

Fast forward to this spring, I discovered that I needed to get a CEPT permit to operate 2m in Europe and this required getting my advanced qualification, a new requirement since 2016.

In looking around, I found the course offered this spring by Delta Amateur Radio Club. I plunked down my \$100 and signed up. This entailed 6 weeks of class time on Saturdays from 9AM to 4 PM. I hadn't been in a classroom since getting my Basic license. The first week was daunting, going over 'the basics' from the Basic course, LOTS OF MATH and formulas. Each week, we were sent the following week's material, we were to review it and do practice questions on the current week. We sent back the practice question and got our grade. You need 70% to pass the Advanced exam so were told to aim for 80%.

Well, this wasn't happening the first few weeks. The instructors were concerned and said I was near the bottom of the class, something I already knew. But I persevered, about week 5, I got 95% on the practice questions. Thing began to fall into place. We were told to begin doing the Industry Canada Advanced practice Exam online, it came up with a different question for each category, 50 questions out of the 550 available. Over the next 2 weeks, I studied the Industry Canada questions daily, 3 time a day for the last week before the exam. It is a multiple choice 50 question exam, no notes and a non programmable scientific calculator. I wrote the exam and was done in about 25 minutes. I had a few questions I had never seen and a few I couldn't figure out the answer to. But the instructors said to never leave a blank since that was an automatic 0.

I went next door and was graded and lo and behold got 78%!

I didn't get the highest mark but didn't get the lowest either. The instructors were pleased that I passed as was I! So I can use high power, can operate a repeater and can use 2m in Europe. It was 2 months of hard work but well worth it.

~ Scott VE7HA

Spring

It's May

We have Field Day pre-planning scheduled at our May meeting . Please join us, visitors are always welcome.

Please remember that our June meeting on the 12th is our SARC Annual General Meeting. There will be a vote for a proposed By-law amendment, to change our fiscal year from June 1-May 31 to May 1—April 30. This is being done to assist with bookkeeping and having sufficient time to have our books audited before the Annual General Meeting.

Time for the AGM and a new fiscal year also means it is time to pay your dues.

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228.

On UHF we operate a repeater on 443.775MHz (+5MHz) Tone=110.9 or IRLP Node 1737.

	SARC Net 20:00 Hrs
1 st Tuesday Standby	Drew VA7DRW Dixie VA7DIX
2 nd Tuesday Standby	Jinty VA7JMR Sheldon VA7XNL
3 rd Tuesday Standby	Rob VE7CZV Vacant
4 th Tuesday Standby	Kapila VE7KGK John VA7XB
5 th Tuesday Standby	Robert VA7FMR John VE7TI
Want a turn at Net Control? Contact the SARC Net Manager	

Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the PREOC
Emergency Mgmt BC
14292 Green Timbers
Way, Surrey, BC

Weekly SARC Breakfast

Saturday between 0800
and 1000 hrs at the
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1930 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360MHz+
Tone= 110.9Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775MHz+
Tone= 110.9Hz
IRLP node 1737



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